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Intraparotid Fasial Nerve Neurofibroma

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CONTENTS

MEDICAL SCIENCES

- Sydenham Chorea: A Review of 50 Patients Followed in Dr. Sami Ulus Children's Hospital Between 1990-1997***
Deniz Oğuz, Selmin Karademir, Sümer Yılmaz, Burhan Öcal,
Filiz Şenocak Feryal Çabuk, Yavuz Güner 181
- Omeprazole: Calcitonin Stimulation Test in Young and Elderly Subjects***
Kenan Keven, Teslime Atlı, Murat Faik Erdoğan, A. Ergün Ertuğ, Gürbüz Erdoğan 185
- Determinants of Adequacy in Pediatric CAPD Patients and Residual Renal Function***
Sevcan A. Bakkaloğlu, Fatoş Yalçınkaya, Necmiye Tümer, Mesiha Ekim, Atilla H. Elhan 189
- Cross-Sectional Study: Using Family Planning Methods and Evaluation of Effective Factors***
Ayşe Yıldız, Nazlı Dalgıç, Nilgün Sarp 193
- A Study About the First Aid Knowledge of the Parents Having Pre-School Children***
Çağlayan Dinçer, Yıldır Atakurt, Işıl Şimşek 203

REVIEW

- A Short History of Psychiatric Classification***
Atilla Soykan, Çiğdem Soykan 213

CASE REPORTS

- Hypokalemic Paralysis; Different Etiologies, Similar Clinical Presentations***
Nilgün Başkal, Sevim Güllü, Şen Dağcı Ilgın, Gürbüz Erdoğan 219
- Jejunum Perforation Secondary to Biliary Stent Migration: A Rare Complication***
Nusret Akyürek 223
- Perineal Lipoma and Penoscrotal Transposition With Anal Agenesis: Does the Mass Impede the Descent of the Bowel?***
Aydın Yağmurlu, Hüseyin Dindar, Meral Barlas 227
- Cavitary Lung Cancer With a Fungus Ball-Like Shadow***
Hadi Akay, Ayten Kayı Cangır, Serpil Dizbay Sak, Serdar Şen, Serdan Han, Hüseyin Akkurt 231
- Intraparotid Fasial Nerve Neurofibroma***
Hüseyin Dere, Ali Çekiç, K. Murat Özcan, Fehmi Aksoy, Sibel Orhun, Cafer Özdem 233

- INDEX** 237

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SYDENHAM CHOREA: A REVIEW OF 50 PATIENTS FOLLOWED IN Dr. SAMİ ULUS CHILDREN'S HOSPITAL BETWEEN 1990-1997**x

Deniz Oğuz ** • Selmin Karademir*** • Sümer Yılmaz**** • Burhan Öcal**
• Filiz Şenocak*** • Feryal Çabuk***** • Yavuz Gürer*****

SUMMARY

Sydenham chorea, a late manifestation of acute rheumatic fever, has been the most common form of acquired chorea in children. Epidemiological studies from developed countries clearly demonstrate a decline in rheumatic fever and Sydenham chorea. Nonetheless, we observed that acute rheumatic fever and Sydenham chorea is still a significant cause of morbidity in our country.

In this study we reviewed fifty patients with Sydenham chorea in the last seven years (1990-1997) in our area. The group consisted of 33 female (66%) and 17 male (34%) ages ranging between 6 and 16 years with a mean age of 11.3 years. The chorea was generalized in 25 patients (50%) and in hemichorea form in the others. Cardiac involvement was detected in four patients (8%). Butirophenon was used for the treatment except two patients who did not respond well. They were given Valproic acid. After 1-210 days (mean:10.6 days) of treatment a remarkable improvement in choreiform movements were detected and in 3-365 days (mean: 59 days) the movements fully disappeared.

In this report we reviewed 50 patients with Sydenham chorea during the past seven years and illustrated that the disease is still a health-care problem in Turkey.

Key words: Acute rheumatic fever-Sydenham chorea

Sydenham chorea, a late manifestation of acute rheumatic fever (ARF) has been the most common form of acquired chorea in children (1,2). Epidemiological studies from developed countries clearly demonstrate a decline in rheumatic fever and Sydenham chorea (3,4). Nonetheless, we observed that ARF is still a significant cause of morbidity in Turkey.

This study was performed to evaluate patients with Sydenham chorea, diagnosed in Dr.Sami Ulus Children's Hospital during the past seven years, and to compare them with patients admitted between 1980-1989, illustrating that the disease is still a health-care problem in Turkey.

PATIENTS AND METHOD

The medical records of 50 patients with Sydenham chorea who were admitted to Dr.Sami Ulus Children's Hospital between 1990 and 1997 were reviewed. All the patients were examined by a pediatric neurologist and a pediatric cardiologist when admitted to the hospital and diagnosis was confirmed by laboratory tests. Telecardiograms, electrocardiograms, and two-dimensional and color Doppler echocardiography of all patients were obtained. Erythrocyte sedimentation rate, antistreptolysin O titer, C-reactive protein, and throat cultures were taken in 42, 38, 34, and 40 of patients respectively.

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x It was presented in VIth Balkan Pediatric Cardiology and Cardiac Surgery Congress on 6th of November, 1998.

Table 1. ARF and chorea between 1980-1997 in Dr.Sami Ulus Children's Hospital

Years	1980-1984	1985-1989	1990-1997
The frequency of ARF per 100000 admission	28.3	46	88.7
The frequency of chorea in ARF (%)	4.2	19	13

The patients were treated with butirophenon (haloperidol) with a daily dose of 0.1 mg/kg (2). Two patients who did not respond well were given Valproic acid (2). Benzathine penicillin was used for the prophylaxis of streptococcus (1.2 million units for patients weighing 27 kg. or more and 600000 units for those weighing less than 27 kg.)

RESULTS

The study group included 33 females (66 %), and 17 males (34 %), ages ranging between 6 and 15 years with a mean age of 11.3 years. The chorea was generalized in 25 patients (19 female, 6 male) and in hemichorea form (14 female, 11 male) in the other 25 patients. Emotional lability was determined in 60 % of patients, speech impairment in 50 %, hypotonia in 48 %, muscular weakness in 38 % and gait disturbance in 36 %. The time interval between the onset of ARF and chorea ranged from 1 day to 6 months, with a mean duration of 17.5 days. Chorea was the only finding in 48 patients (92 %). In four patients (8 %) chorea was associated with mitral valvular insufficiency. Active carditis was not detected. At the time of diagnosis throat cultures for group A beta haemolytic streptococcus were positive in 8/40 patients (20 %), anti-streptolysin O titres were elevated in 28/38 patients (73.6 %), C-reactive protein was positive in 3/34 patients (8.8 %), and the erythrocyte sedimentation rate was elevated in 23/42 patients (54.7 %). Butirophenon (Haloperidol) was used for the treatment except the two patients who did not respond well and Valproic acid was given. After 1-210 days (mean:10.6 days) of treatment a remarkable improvement in choreiform movements were detected and in 3-365 days (mean: 59 days) the involuntary movements fully disappeared.

DISCUSSION

Up to last decade, Sydenham chorea had become a rare condition in the Western world, however re-

cently, there have been many reports showing an increasing rate of ARF since the mid 1980s (5-7). It is noticeable that in developing countries rheumatic fever and Sydenham chorea have remained a significant problem for years without any decline (8,9). The incidence of rheumatic fever reaches to 100-150 children per 100000 of the population in these countries and therefore, 15-45 % of them are at risk to be temporarily disabled by chorea (10). In a report from Ohio, 17 % of children with rheumatic fever presented with choreic manifestation (5). In an epidemiological study from Israel, a dramatic decline in both incidence and severity of ARF and chorea in the last decade was described. The incidence of rheumatic fever in this study was 99.3 per 100000 children in 1960-1970, 107.3 per 100000 children in 1970-1980 and 15.5 per 100000 children in 1980-1990. The frequency of chorea in ARF was found to be 3.47 % in 1960-1970, 6.07 % in 1970-1980, and 1.21 % in 1980-1990 in their reports (11). Their results showed the declining frequency of ARF, in the last decade and in addition show a decrease in the absolute and relative frequency of Sydenham chorea in Israel.

Turkey is a developing country and rheumatic fever and chorea is still diagnosed frequently. The frequency of ARF in our hospital in a previous study was estimated to be 28.3 per 100000 children in 1980-1984, 46 per 100000 children in 1985-1989 (12). In this study it is found to be 88.7 per 100000 children between 1990 and 1997. The frequency of chorea in rheumatic fever was 4.2 % in 1980-1984 and 19 % in 1985-1989 in our previous study (13). This study showed that the frequency of chorea is 13 % in 1990-1997.

The clinical spectrum of Sydenham chorea is well described. It is an acute disease of childhood characterized by the gradual or sudden appearance of emotional lability, muscular hypotonia, and choreiform movements of the muscles of the face, trunk and extremities. There is an 2:1 female to male prevalence ra-

tio, and the patients mostly present between 5 and 15 years of age. There is a high familial prevalence suggesting a hereditary susceptibility (1,2). Our study group consisted of 33 female and 17 male (approximately 2:1), age ranging between 6 and 16 years. There was various degrees of involuntary movements, hypotonia, muscular weakness and emotional instability in our patients. Although the family history was negative for Sydenham chorea there was a history of rheumatic fever in three relatives of our patients.

Chorea is usually generalized although occasionally focal (1,2). Hemichorea was seen in 18 % of choreic patients reviewed by Aron and associates (14). In our study group hemichorea was seen in half of the

patients. Chorea lasts from 1 month to 2 years with miscellaneous group of medications (1,2,15,16). The involuntary movements disappeared in 3-365 days (mean 59 days) with butirophenon in this study. Valproic acid was used in two patients who didn't respond to haloperidol for control of the involuntary movements. Complete recovery without gross neurologic sequele is the rule in Sydenham chorea (1). There is also no sequele in our patients.

In conclusion, ARF is still a health care problem in our country. As the disease is preventable by the eradication of streptococcus, we conclude that more effort should be made in the early detection and treatment of streptococcal infections.

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OMEPRAZOLE: CALCITONIN STIMULATION TEST IN YOUNG AND ELDERLY SUBJECTS

Kenan Keven* • Teslime Atlı* • Murat Faik Erdoğan**
• A. Ergün Ertuğ* • Gürbüz Erdoğan**

SUMMARY

Aim of this study is to compare the C-cell calcitonin (CT) response to increased endogenous gastrin (GT) achieved by omeprazole between young and elderly sex-matched healthy subjects. Twenty-three (13 male, 10 female) elderly subjects and 42 (22 male and 20 female) young subjects were studied. After taking blood samples for basal CT and GT determinations, omeprazole 20 mg b.i.d. was given for 3 days, CT and GT levels were repeated on the fourth day. Significant increments in GT levels were obtained in both groups. Basal and stimulated CT levels and the increment observed in CT levels were not significantly different between young and elderly subjects (basal; 18.7 ± 12 vs 18.9 ± 22 ng/L, stimulated; 23.7 ± 19 vs 19.9 ± 16 ng/L, respectively, $p > 0.05$). Elderly females had the lowest basal CT values and did not show any increment to stimulation (basal; 10.5 ± 10 stimulated; 10.5 ± 11 ng/L). This study shows that physiological role of endogenous GT in CT secretion is not significant for healthy young and elderly subjects. But elderly female had the lowest basal CT levels which might indicate a functional or numeral loss of C-cells with aging.

Key words: aging, calcitonin secretion, omeprazole.

The functional capacity of many endocrine glands is affected with increasing age. Calcitonin (CT) is a potent peptide preventing bone resorption by inhibiting osteoclastic activity (1). Several studies had shown that there is a progressive decrease in basal and calcium stimulated serum calcitonin levels with age (2,3,4).

Omeprazole markedly inhibits gastric acid secretion and elevates serum gastrin (GT) levels secondary to the pronounced reduction of intragastric acidity. Recently we reported a new stimulation test for calcitonin secretion via endogenous gastrin release by omeprazole, in Medullary Thyroid Carcinoma (MTC) and C Cell Hyperplasia (CCH) patients (5). Aim of the present study is to compare the C-Cell CT response to endogenous GT release, between young and elderly sex-matched normal controls.

PATIENTS AND METHODS

Twenty three (13 male and 10 female) elderly subjects, aged; 67 ± 6 (mean \pm SD) and 42 (22 male and 20

female) young subjects, aged; 28 ± 7 (mean \pm SD) were studied. None of the subjects had history of any disease. In all subjects, thyroid function tests (free T₃, free T₄ and sTSH) were within the normal range and they were otherwise healthy. Neither of the patients were on H-2 receptor blocking agents before the study.

Omeprazole Stimulation Test: After fasting blood samples were taken for basal CT and GT determinations, omeprazole 20 mg b.i.d. was given for 3 days, and fasting blood samples for CT and GT were withdrawn on the 4th day.

Gastrin assay: Serum GT was measured by double antibody Gastrin RIA kit (Diagnostic Products Corp., Los Angeles, CA). The assay system utilizes a broad spectrum antibody capable of recognizing the several forms of GT (G-14, G-17, G-34). The sensitivity was 4.7 ng/L. The coefficient of variation of the intraassay comparison was 5.2 % for a mean of 200 ng/L, and that of the interassay comparison was 4.0 % for 331 ng/L. Fasting venous blood was taken at 09 00, and

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plasma was separated immediately and stored at -20°C .

Calcitonin assay; Immunoreactive CT was measured by the DSL calcitonin RIA kit (Diagnostic Systems Laboratories, Webster, TX). The sensitivity was 14 ng/L. The coefficient of variation of the intraassay comparison was 5.3 %, and that of the interassay comparison was 7.1% for 75 ng/L. All subjects gave informed consent.

Statistics: Wilcoxon signed-ranks test, Mann-Whitney U test and Kruskal-Wallis test were used for the statistical evaluation. P values of less than 0.05 were considered to indicate statistical significance.

RESULTS

Basal GT levels were significantly higher in elderly subjects compared to the young age group (156 ± 159 vs 31 ± 15 ng/L, $p>0.01$). Basal GT levels were similar between male and female subjects for the same age group ($p>0.05$) (table 1). Significant increments in GT levels were obtained by omeprazole stimulation within both young and elderly groups (from 31 ± 15 to 93 ± 57 ng/L, $p<0.01$ in young and from 156 ± 159 to 220 ± 198 ng/L, $p<0.01$, in elderly). However, the mean increment within the groups were not significantly different for the two groups (63 ± 82 in elderly, 61 ± 51 ng/L, in young, $p>0.05$).

Mean basal CT levels were not significantly different in young and elderly subjects (18.7 ± 12 vs 18.9 ± 22 ng/L, respectively). Male subjects had higher basal CT levels than the female subjects in both groups. Basal CT levels were significantly and systematically higher in young males when compared to young females (24.6 ± 13 vs 11.9 ± 8 ng/L, $p<0.001$) but this

was not true when the elderly males and females were compared (23.4 ± 27 vs 10.5 ± 10 ng/L, $p>0.05$) (Table 1).

Regarding to CT response to omeprazole stimulation (table 1), the differences between young and elderly groups were not significant (from 18.7 ± 12 to 23.7 ± 19 ng/L in young subjects, from 18.9 ± 22 to 19.9 ± 16 ng/L in elderly subjects ($p>0.05$). Basal and stimulated CT levels were 24.6 ± 13 to 28.5 ± 21 ng/L respectively in young males ($p>0.05$), and 11.9 ± 8 to 18.2 ± 14 ng/L also respectively in young female subjects ($p>0.05$). Elderly males responded slightly but also insignificantly to omeprazole stimulation ($p>0.05$) (CT levels increased from 23.4 ± 27 to 26 ± 17 ng/L, $p>0.05$). Elderly females had the lowest basal values and did not respond to omeprazole stimulation at all (CT levels increased from 10.5 ± 10 to 10.5 ± 11 ng/L, $p>0.05$).

DISCUSSION

Calcitonin is a peptide hormone secreted by parafollicular C-cells of the thyroid gland. Pentagastrin and calcium are the principal secretagogues of C-cells. Although it has been shown that aging and female sex were associated with a decrease in basal and calcium stimulated serum CT levels, the role of endogenous calcitonin in the pathogenesis of postmenopausal osteoporosis is controversial (6,7). Treatment with exogenous salmon calcitonin lead to important decrement in bone loss. Thus, understanding of calcitonin secretion dynamics with endogenous gastrin release rather than stimulation with pentagastrin and calcium may be important for physiologic evaluation of C cells.

Table 1. Basal and Stimulated GT and CT Levels in the Groups (Mean \pm SD)

Groups	Age	Basal GT	Stimulated GT	Basal CT	Stimulated CT
Young Male (n=22)	29 \pm 8	31.4 \pm 14	87 \pm 43*	24.6 \pm 13	28.5 \pm 21
Young Female (n=20)	27 \pm 6	32 \pm 16	100 \pm 71*	11.9 \pm 8	18.2 \pm 14
Young Total (n=42)	28 \pm 7	31 \pm 15	93 \pm 57*	18.7 \pm 12	23.7 \pm 19
Elderly Male (n=13)	67 \pm 8	174 \pm 169	346 \pm 256 ⁺	23.4 \pm 27	26 \pm 17
Elderly Female (n=10)	66 \pm 4	78 \pm 23	165 \pm 112 ⁺	10.5 \pm 10	10.5 \pm 11
Elderly Total (n=23)	67 \pm 6	156 \pm 159	220 \pm 198 ⁺	18.9 \pm 22	19.9 \pm 16

GT: Gastrin ng/L, CT: Calcitonin ng/L, * $p<0.001$; Statistical significance between basal and stimulated levels, ⁺($p<0.01$); Statistical significance between basal and stimulated levels.

Gastrin levels increased significantly in young and elderly subjects when gastric acidity was markedly inhibited by omeprazole. Our finding of higher basal gastrin levels in elderly subjects can be explained by higher incidence of atrophic gastritis and lower gastric acidity reported before (8). However, the increments of GT with omeprazole stimulation were not different for young and elderly subjects. On the other hand, neither the basal calcitonin levels nor the increment of calcitonin were significant between young and elderly groups. Basal CT levels were significantly and systematically higher in young males when compared to young females but this was not true when the elderly males and females compared. **Observed** slightly higher basal and stimulated male patterns were concordant with the literature (9,10). In their study, Morimo-

to et al., showed that although there was no difference in basal calcitonin levels of elderly and young subjects, after stimulation with calcium, young subjects had higher calcitonin peaks than the elderly (4).

The sex dependent difference in responsiveness to calcium infusions had been attributed to the sex hormones but estrogen treatments did not alter basal and calcium stimulated responses (11,12).

Our study shows that omeprazole stimulation does not lead to prominent calcitonin secretion and the physiological role of endogenous GT in CT secretion is not significant for healthy young and elderly subjects. However, elderly females had the lowest mean basal levels of CT which might indicate a functional or numeral loss of C Cells with aging.

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DETERMINANTS OF ADEQUACY IN PEDIATRIC CAPD PATIENTS AND RESIDUAL RENAL FUNCTION

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SUMMARY

The purpose of this study is to determine the value of weekly KT/V urea (W.KT/V) and total normalized creatinine clearance (T.Ccr) to define the adequacy of CAPD in children. In 17 children treated with CAPD (median age 14 yrs) KT/V and T.Ccr (by dialysis and the kidney) were measured. Mean W.KT/V was 1.97 ± 0.6 and mean T.Ccr was 56 ± 32 L/week/ 1.73 m^2 . A clear positive correlation was found between W.KT/V and T.Ccr ($r=0.862$, $p<0.001$). Both of these indices were found strongly correlated with residual renal function (RRF) ($p<0.001$), but not with peritoneal KT/V and peritoneal Ccr. W.KT/V was found to be influenced essentially with RR.KT/V ($p<0.001$) and also dialysate fill volume (DV) ($p<0.01$). $W.KT/V = -0.0096 + 0.757 \times RR.KT/V + 0.057 \times DV$, $R^2=0.85$. T.Ccr was influenced primarily with RR.Ccr ($p<0.001$) and serum cr levels ($p<0.05$). $T.Ccr = 60.4 - 2.21 \times cr + 0.87 \times RR.Ccr$, $R^2=0.96$. According to standardized regression coefficients, RR.KT/V and RR.Ccr were found as the most important factors on dialysis adequacy. In this study, it was shown that, the mean values of W.KT/V and T.Ccr were heavily influenced with RRF. Almost all variations in W.KT/V and T.Ccr represented variations in RRF. Thus one of the goals of the pediatric nephrologists must be to preserve renal reserve.

Key words: Continuous ambulatory peritoneal dialysis, dialysis adequacy, weekly KT/V urea, total normalized creatinine clearance, residual renal function.

Although peritoneal dialysis (PD) is now an established form of dialytic therapy in the management of adult patients with end stage renal failure (ESRF), it has taken more than a century of work and research to arrive at this situation (1-4). During the past decade our understanding and experience of the technique and its pediatric applications has increased substantially (5,6). It was documented that, usage of chronic peritoneal dialysis has dramatically increased as a maintenance dialysis treatment and ideally suited for pediatric patients (7). Decrease in the infectious complications and improvements in technique prolonged the survival of the patients (8). Today one of the most important issues in the long term survival of the PD is to assure adequate dialysis. Since the clinical criteria of inadequate dialysis are subjective, nonquantitative and appear too late, more objective indices are needed to assess the adequacy of dialysis. The investigations on this topic began with some kinetic studies in

adult Continuous ambulatory peritoneal dialysis (CAPD) patients and to establish the objective indices consumed a considerable length of time (9-12). Initially the clearance of urea is used as a marker of dialysis dose based on urea kinetic modeling concept (9-13). In addition, creatinine (cr) kinetics were widely used in adults as models to quantitate therapy prescription based on cr removal (13). So the calculation of weekly urea clearance (W.KT/V) and total normalized cr clearance (T.Ccr) are advocated as parameters suitable for quantifying the amount of the dialysis and for optimizing the prescription in adult CAPD patients (14). For pediatric CAPD population such guidelines are still scarce and target clearances are not determined clearly (15,16).

The aim of this study is to measure the urea and cr clearances in a pediatric CAPD population in order to determine the value of these indices to define the adequacy of PD in children.

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PATIENTS AND METHODS

Measurements were performed in 17 children on CAPD (median age 14 years, range 7 to 19, mean \pm SD: 13.5 \pm 2,8 years). Two children were anuric, whereas 15 had some residual renal function (RRF). Their mean residual urine volume was 0,93 \pm 0,32 ml/kg/h and glomerular filtration rate (GFR) was 3,56 \pm 1,79 ml/min/1.73m² (mean \pm SEM). Their mean duration of chronic renal failure and PD were 47,5 \pm 32 and 13,7 \pm 11 months (mean \pm SD), respectively. All except three had at least one episode of peritonitis. None of the studies was performed within the month following an episode of peritonitis. The patients were treated with four daily exchanges of 28.4 \pm 4.5 ml dialysis fluid/kg body weight (mean \pm SD). Mean daily ultrafiltration volume was 462 \pm 235 ml (mean \pm SD).

W.KT/V and T.Ccr were calculated from 24-hour urine and dialysate specimens and a blood sample. W.KT/V is the ratio between the total clearance of urea over a given treatment time and the distribution volume. T.Ccr is the sum of peritoneal and renal Ccr.

The formulas that were used for calculations were explained in Table 1 and 2. Dialysate cr concentration was corrected for dialysate glc concentration using the following correcting factor determined in our laboratory (corrected cr: dialysate cr - (dialysate glc x 0.0001513)).

Results were expressed as mean \pm SD or the SEM when appropriate. Associations between variables were evaluated by the method of least squares (Pearson's correlation coefficients). Multiple linear regression analysis was used to assess the relationship between PD adequacy parameters and RRF. Any p values less than 0.05 were considered significant.

RESULTS

Mean W.KT/V was found 1.97 \pm 0.6 and mean T.Ccr was 56 \pm 32 (mean \pm SD) L/week/1.73m². Mean RR.KT/V and mean RR.Ccr were calculated as 0,56 \pm 0,2 and 21 \pm 7 L/week/1.73m², respectively (mean \pm SEM) (Table 2). A clear positive correlation was found between W.KT/V and T.Ccr (r=0.862, p<0.001).

Table 1. The calculation of weekly KT/V urea

Residual renal KT/V urea (RR.KT/V)	
RR urea clearance (ml/min):	$\frac{24\text{-hr urine urea (mmol/l)}}{\text{Serum urea (mmol/l)}} \times \frac{24\text{-hr urine volume (l)} \times 1000}{1440}$
RR. KT/V: (per week)	$\frac{\text{RR. urea clearance (ml/min)} \times 1440 \times 7}{\text{Body weight (kg)} \times 0.6 \text{ (male)} \times 1000}$ 0.55 (female)
Peritoneal KT/V urea (P.KT/V)	
Peritoneal KT/V: (per week)	$\frac{24\text{-hr dialysate urea (mmol/l)}}{\text{Serum urea (mmol/l)}} \times 24\text{-hr dialysate volume (l)} \times 7$ Body weight (kg) \times 0.6 (male) 0.55 (female)
Weekly KT/V urea = RR. KT/V + P.KT/V	

Table 2. The calculation of total normalized creatinine clearance

Residual renal Ccr (RR.Ccr)
$\text{RR. CCr} = \frac{\left(\frac{24\text{-hr urine cr (mmol/l)}}{\text{Serum cr (mmol/l)}} \times 24\text{-hr urine volume (l)} \times 7 \right) + \left(\frac{24\text{-hr urine urea (mmol/l)}}{\text{Serum urea (mmol/l)}} \times 24\text{ hrs urine volume (l)} \times 7 \right)}{2}$
Peritoneal Creatinine clearance (P.Ccr)
$\text{Peritoneal Ccr} = \frac{24\text{-hr dialysate Cr (mmol/l)}}{\text{Serum Cr (mmol/l)}} \times 24\text{-hr dialysate volume (l)} \times 7$
Total Creatinine clearance = RR.Ccr + P.Ccr
$\text{Total normalized Ccr} = \text{T.Ccr} = \left(\frac{\text{l/week}}{1.73 \text{ m}^2} \right) \times \frac{\text{Total creatinine clearance} \times 1.73 \text{ m}^2}{\text{Body surface area (m}^2\text{)}}$

In addition both of these parameters were found strongly correlated with RRF (RR.KT/V, RR.Ccr, urine output) ($p < 0.001$) (Table 3).

Both W.KT/V ($r = -0.648$, $p < 0.01$) and T.Ccr ($r = -0.757$, $p < 0.001$) were found negatively correlated with serum cr levels. But no correlation was detected between these two indices and plasma urea levels.

W.KT/V was found to be influenced essentially with RR.KT/V ($p < 0.001$), and also dialysate fill volume (based by body weight) ($p < 0.01$). T.Ccr value was influenced primarily RR.Ccr ($p < 0.001$) and serum cr levels ($p < 0.05$). According to "Multiple regression analysis" the relationships were as follows:

$\text{W.KT/V} = -0.0096 + 0.757 \times \text{RR.KT/V} + 0.057 \times \text{DV}$, $R^2 = 0.85$

$\text{T.Ccr} = 60.4 - 2.21 \times \text{cr} + 0.87 \times \text{RR.Ccr}$, $R^2 = 0.96$.

DISCUSSION

In this pediatric CAPD patient group, W.KT/V and T.Ccr values were found similar to the values that had been reported for adults. There was a significant positive correlation between these two indices. As T.Ccr and W.KT/V are strongly correlated with each other,

both of these indices were suggested as equivalent measures of dialysis adequacy, in this study. There are no clinical studies in children which demonstrate the superior utility of one or the other marker. Thus, it seems reasonable to use both of them. We believe that, calculations of urea and cr clearances on a regular basis are necessary, but in order to define more accurate dialysis adequacy in children additional longitudinal prospective studies are needed.

In this study, it was also shown that, the mean values of W.KT/V and T.Ccr were heavily influenced with RRF. Almost all variations in W.KT/V and T.Ccr represent variations in RRF. Faller and Lameire sho-

Table 3. Correlations between WKT/V /T.Ccr and residual renal clearances

	RR.KT/V	RR.Ccr	UO
W.KT/V urea	$r = 0.845$, $p < 0.001$	$p < 0.001$ $r = 0.760$,	$r = 0.777$, $p < 0.001$
Total Ccr	$r = 0.952$, $p < 0.001$	$p < 0.001$ $r = 0.924$,	$r = 0.968$, $p < 0.001$

wed that the T.Ccr and W.KT/V decreased over time, only because of the progressive fall in RRF (17). Residual solute clearance (GFR) of 1 ml/min is equivalent to a weekly clearance of roughly 10 liters. So the level of RRF should be considered as remarkable factor that closely affects the values of the W.KT/V and T.Ccr (18). Thus one of the goals of pediatric nephrologists must be to preserve renal reserve. Maintenance of the residual diuresis with careful use of diuretics, avoidance of nephrotoxic drugs and excessive peritoneal ultrafiltration seem to be very important.

Recent data demonstrated that, RRF is better preserved in CAPD patients compared to patients on hemodialysis (19,20). Constant overhydration, a greater hemodynamic stability with less abrupt fluctuations in

volume and osmotic load in CAPD are considered as causative factors that have positive effects on renal function (21). Thus, CAPD might be advised as the first maintenance dialytic therapy for patients who have residual renal reserve.

Besides the RRF, DV was also found to be an important determinant in the achievement of an adequate solute clearance. As RRF declines, an important variable that can be manipulated to achieve a target clearance is exchange volume (22). Thus, increased fill volumes will result in increased solute removal and the usage of large dialysis volumes will be helpful in reaching higher target clearances, especially in the patients who have lost most of the residual diuresis.

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CROSS-SECTIONAL STUDY: USING FAMILY PLANNING METHODS AND EVALUATION OF EFFECTIVE FACTORS

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SUMMARY

A cross-sectional study is planned to evaluate the use of family planning methods and effective factors. Three hundred and forty-three fertile, married women aged 15-49 years are selected by a method of random systematic sampling. A questionnaire is used for data collection by face to face interview. The data are analysed by a packaged statistical program, SPSS. The women were asked for the use of contraception and other effective factors. Modern method use is six times more prevalent than traditional method use. The IUD (34.7%) and withdrawal (9.6%) are the most commonly used methods among modern and traditional methods. Age, working status, number of living children and level of education affect the use of contraception. Discontinuation of the methods, sources of supply, intent to use family planning methods and abortions are also investigated.

Key words: Family planning, use of contraception, modern and traditional methods

High fertility, which is one of the most important related issues in developing countries, affects mother and child health and socio-economic development of a nation.

Fertility continues to decline in Turkey however, over 50% of urban women receive prenatal care and only 70% of deliveries in urban areas, occur in hospitals (1).

According to the 1993 Turkish Demographic and Health Survey, only 63% of currently married women are using contraceptive methods and only 35% are using modern methods; 80% of currently married women have used a method sometime in their lives. Although 40% of the women do not want to have any more children, they continue to use traditional methods; this might be due to inadequate family planning counseling during antenatal visits and provision of related services during postpartum periods at the health care facilities (1).

The present study examines the association between the use of family planning methods, discontinuation rates and effective factors, including fertility.

MATERIAL and METHOD

This study is a cross-sectional study of the use of family planning methods and effective factors among 343 fertile age married women, residing in urban area of Mother and Child Health/Family Planning Center in Yenimahalle Province in 1997. The reference population consisted of 7099 women. By 1:20 random systematic sampling method, 335 women were selected. Considering the nonrespondents, sample size was increased by 5%. The study began in October 1997. A questionnaire was used for data collection by face to face interview. The questionnaire covered the following major topics:

- Background characteristics
- Fertility
- Knowledge and use of family planning methods
- Other issues relevant to contraception
- Working status of women

The data was computerized by using SPSS, a packaged program. The value of error α (Type I error) was defined as 0.05.

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RESULTS

Background Characteristics of the Study Population

Age

The age distribution of the study population is shown in Table 1.

Education Level

Table 2 represents the education level of the sample. The education level is perhaps the most important characteristic because, issues such as reproductive behavior, use of contraception are affected primarily by education.

Fertility

Fertility measures in this study are based on the reproductive histories of the women. Each woman was asked for the number of living children and also history of their births. According to the results, levels of fertility increases by age. After reaching a peak in 30-34 years, it begins to decrease. The number of living children of this age group is 158, ie: 26.3% of total.

Table 3 presents an inverse relation between education level and number of living children. The percent of the women having no children and those having three and more, is twice as prevalent among women with secondary education compared to those women with higher education ($\chi^2=88.9$, $p<0.05$).

Working status is another factor that inversely affects fertility. The number of living children of non working women is greater than that of working women while 38.9% of non working women have three and more children, whereas 4.5% of working women have three and more children ($\chi^2=32.7$, $p<0.05$).

Table 1. Study Population by Age

Age	Number of Women	%
15-19	15	4.3
20-24	51	14.9
25-29	109	31.7
30-34	73	21.3
35-39	52	15.2
40-44	28	8.2
45-49	15	4.4
Total	343	100.0

Table 2. Level of Education of the Study Population

Level of Education	Number of Women	
	n	%
No edu/ Pri.comp	140	40.8
Secondary Complete	50	14.6
Secondary Complete +	153	44.6
Total	343	100.0

Current Use of Contraception

Table 4 presents data on the proportion of women who are using family planning methods by age. Table 4 shows that 72% of the women are currently using modern methods, whereas 13.7% of them are using traditional methods. As these women reside in urban area, the use of modern methods are five times more prevalent than the use of traditional methods ($\chi^2=23.9$, $p<0.05$).

Table 3. Distribution of the Women by Number of Living Children and Level of Education

Level of Education	Number of Living Children						Total	
	0		1-2		3+		n	%
	n	%	n	%	n	%		
No edu/ Pri.comp	6	15.0	59	28.2	75	79.8	140	40.8
Secondary Complete	10.0	39	18.7	7	7.4	50	14.6	
Secondary Complete+	30	75.0	111	53.1	12	12.8	153	44.6
Total	40	100.0	209	100.0	94	100.0	343	100.0

Table 4. Distribution of Women Using Contraceptive Methods by Age

Age	Not using any method		Traditional Methods		Modern Methods		Total	
	n	%	n	%	n	%	n	%
15-19	5	10.2	1	2.1	9	3.6	15	4.4
20-24	10	20.4	7	14.9	34	13.8	51	14.9
25-29	12	24.5	16	34.1	81	32.8	109	31.7
30-34	8	16.3	9	19.1	56	22.7	73	21.3
35-39	6	12.2	2	4.3	44	17.8	52	15.1
40-44	4	8.2	9	19.1	15	6.1	28	8.2
45-49	4	8.2	3	6.4	8	3.2	15	4.4
Total	49	100.0	47	100.0	247	100.0	343	100.0

Age affects the use of modern methods. As age increases, the prevalence of the use of modern methods also increases. In these years women are likely to have no more children so modern methods come to the agenda. As fertility decreases by age, the use of modern methods also decreases. But the percent of women aged 15-19 years who use modern methods, is as twice as that women using traditional methods. This indicates that fertility appears to be controlled shortly after marriage.

The association between proportion of women who use contraception and age is given in Table 5. Overall, 86.6% of women use a contraceptive method. The majority of these women are modern method users (72.0%), but a substantial proportion use traditional methods (13.7%). IUD (34.7%) is the most commonly used modern method, whereas withdrawal (9.6%) is the most widely used traditional method. Condom (16.9%) and pill (11.4%) are the second and

third popular modern methods. The use of IUD is not common in 15-19 years, but the use of modern methods such as pill and condom is prevalent in these ages. After the first delivery, IUD use exceeds the use of other modern methods in all ages except the 40-44 and 45-49 age groups. Considering the age, modern method use is the most prevalent in 30-34 age group. Modern methods are practised more frequently than traditional methods in all ages. At the beginning of the fertile period, IUD is not a preferred method of contraception ($\chi^2=120.7$, $p<0.05$).

The distribution of women by contraceptive method currently used according to education and number of living children is presented in Table 6. Current use of contraception increases directly with education. In all levels of education, the use of modern methods is more than that of traditional methods. Women with primary or higher education are more likely to use modern methods than traditional methods, especi-

Table 5. Percent Distribution of Women by Contraceptive Methods Currently Used by

Age	Not using any methods	Modern Methods						Traditional Methods		
		IUD	Pill	Condom	Injection	Fem. Steril.	Male Steril.	Withdrawal	Per. Abst.	Vag. Dou.
15-19	26.7	13.3	26.7	20.0	0.0	0.0	0.0	6.7	0.0	0.0
20-24	21.6	37.3	7.8	19.6	2.0	0.0	0.0	7.8	0.0	0.0
25-29	11.0	38.5	13.8	18.3	0.9	1.8	0.0	10.1	1.8	0.0
30-34	11.0	35.6	12.3	19.2	0.0	8.2	0.0	8.2	2.7	0.0
35-39	7.7	44.2	9.6	5.8	1.9	19.2	1.9	5.8	1.9	0.0
40-44	14.3	17.9	0.0	28.6	0.0	7.1	0.0	5.8	7.1	3.6
45-49	20.0	13.3	13.3	0.0	0.0	26.7	0.0	13.3	0.0	6.7
Total	13.4	34.7	11.4	16.9	0.9	7.0	0.3	9.6	2.0	0.0

ment Hospitals. Pharmacies and private physicians are also sources of supply. 88.5% of women who currently use a modern method are the users of IUD, pill and condom. The results are presented in Figure 1.

Contraceptive Discontinuation

Contraceptive discontinuation rate due to method failure, desire for pregnancy, side effects and other reasons are given in Table 8. For the pill, side effects and method failure account for a large part of the discontinuation. This may be due to inappropriate counseling for the pill and other reasons given by the user i.e: forgetting to take the pill regularly everyday. The high method failure for the IUD, is probably due to inappropriate application of the device. The highest failure rate is observed for periodic abstinence (71.4%). This may be due to the fact that periodic abstinence is used mostly by the delayers who are not highly motivated ($\chi^2=361.5, p<0.05$).

Table 9 shows the percent distribution of the discontinuation of contraceptive methods that women

have used. Major reason for the discontinuation of the traditional method is pregnancy and to become pregnant is the major reason for the discontinuation of the modern method. In all methods, to become pregnant is the leading reason for discontinuation of contraception. Pregnancy is the main reason that makes the difference between the reason for discontinuation of contraception of the traditional and the modern methods. Side effects are another factor that affect the discontinuation of the modern methods ($\chi^2=85.6, p<0.05$).

Intent to Use Family Planning Among Nonusers

Intent to use contraception in the future, provides a forecast of potential demand for services and is convenient indicator of the disposition towards contraception among current nonusers. Women who were not using a contraceptive method at the time of the research, were asked if they thought they would do something to prevent pregnancy at any time in the future. The women who reported that they were intending

Table 8. Disribution of Contraceptive Discontinuation Rates

Method	Method Failure	Desire for Pregnancy	Side Effects	Other Reasons	All Reasons	Total
Pill	7.8	20.5	17.9	12.8	59.0	100.0
IUD	20.2	19.3	6.7	7.6	53.8	100.0
Condom	17.2	20.7	19.0	6.9	63.8	100.0
Per. Abs.	71.4	0.0	0.0	0.0	71.4	100.0
Withdrawal	12.2	15.2	24.2	3.0	54.6	100.0

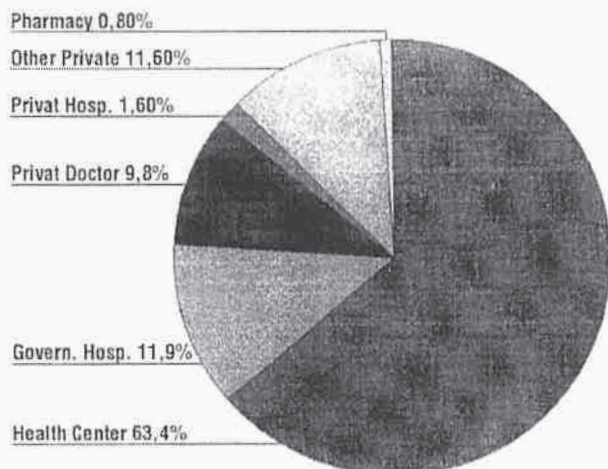


Figure 1. Sources of Supply of Modern Contraceptive Methods.

Table 9. Distribution of Reasons for Discontinuation of Contraception

Reasons for Discontinuation	Modern Methods		Traditional Methods	
	n	%	n	%
Became Pregnant	13	9.8	43	60.6
To become Pregnant	58	43.6	14	19.7
Side Effects	49	36.8	1	1.4
More Effective Method	3	2.3	10	14.1
Husband Disapproval	10	7.5	3	4.2
Total	133	100.0	71	100.0

to use family planning method were 2.9% of the total. This intention is closely related to the number of children a woman has. But in our research, according to the results, only 1.2% of the women who have one child intend to use contraceptive methods in the future because the percentage of the women who use contraception accounts for a larger part of the sample; it is 91.5 % of the total.

Desire for Pregnancy

Desire for pregnancy seems to be the mostly affected by the number of living children. As the number of living children increases, the desire for pregnancy decreases and timing of pregnancy changes. Percentage distribution of women who have desire for pregnancy by number of living children is presented in Table 10. 93.4 % of the women who have three and more children do not want to be pregnant, whereas

77.5% of the women having no children, want to be pregnant in 2 years ($\chi^2=143.4$, $p<0.05$).

Table 11 shows the percent distribution of women by timing of pregnancy according to level of education. As the level of education increases, desire for pregnancy decreases. Among women with no education/primary complete, 86.7% do not want pregnancy. The women with a secondary or higher education do not want pregnancy with 66.0% and 58.2% respectively, but the percentage of women who want to have children after 2 years is higher than the least educated women, especially it is higher among educated women ($\chi^2=212.7$, $p<0.05$).

Abortions

Induced abortions have greater important effects on women's health and fertility and significance for family planning services. According to the results, in our

Table 10. Distribution of Desire for Pregnancy by Number of Living Children

Desire for Pregnancy	Number of Living Children						Total	
	0		1-2		3+			
	n	%	n	%	n	%	n	%
Does not Want Pregnancy	5	12.5	152	71.7	85	93.4	242	70.6
Want Pregnancy In 2 Years	31	77.5	28	10.8	0	5.5	59	17.2
Want Pregnancy After 2+ years ⁴	10.0	37	17.5	1	1.1	42	12.2	
Total	40	100.0	217	100.0	86	100.0	343	100.0

Table 11. Percent Distribution of Women by Timing of Pregnancy According to Level of Education

Timing of Pregnancy	Level of Education						Total	
	No. edu/Pri.com.		Sec. Comp.		Sec. Comp+			
	n	%	n	%	n	%	n	%
Does not Want Pregnancy	120	85.7	33	66.0	89	58.2	242	70.6
Want Pregnancy In 2 Years	13	9.3	11	22.0	35	22.8	59	17.2
Want Pregnancy After 2+ years	7	5.0	7	12.0	29	19.0	42	12.2
Total	140	100.0	50	100.0	153	100.0	343	100.0

research 29.7% of the women had induced abortion and 22.4% had spontaneous abortion at some time in their lives. Table 12 and 13 show the percent distribution of the women who had induced and spontaneous abortions by age and level of education.

Induced abortions per 100 women increases by age, reaching the highest level in 35-39 age group then it declines. Abortion rate is the highest in the least educated group with 51.6 and 87.5 per 100 women. Spontaneous abortion pattern is also similar to that of induced abortion. As the age increases, spontaneous abortion rate per 100 women increases ($\chi^2=65.7$, $p<0.05$).

DISCUSSION

Three hundred and forty-three married and aged 15-49 years women are included in the research.

31.7% of the women are between 25-29 years and 59.2% are at least graduates of secondary school. The mean number of living children is 1.8. It is similar to that of some other research findings (1-4). The majority of these women are modern method users (72.0%), but a substantial proportion use traditional methods (13.7%). 14.3 percent of the women do not use any method. Current use of modern methods is similar to some other results (5-9). According to the 1993 Turkish Demographic and Health Survey (TDHS), the current use of contraception is 63%. 35 percent of those women are modern method users and 28% use traditional methods (1). As the research is conducted in an urban area and the majority of the women are educated, the use of current modern methods is higher than the results of the 1993 Turkish Demographic and Health Survey.

Table 12. Distribution of the Women who had Spontaneous and Induced Abortios by Age

Age	Spontaneous Abortions						Induced Abortions					
	0		1-2		3+		0		1-2		3+	
	n	%	n	%	n	%	n	%	n	%	n	%
15-19	13	5.7	2	1.1	0	0.0	14	4.9	1	2.6	0	0.0
20-24	45	19.7	5	3.3	1	50.0	48	16.9	3	6.5	0	0.0
25-29	90	37.3	19	19.8	0	0.0	91	34.0	18	25.0	0	0.0
30-34	54	18.4	18	27.5	1	50.0	45	20.4	25	23.7	3	38.0
35-39	34	9.4	18	28.5	0	0.0	23	12.8	26	23.7	3	38.0
40-44	18	6.6	10	11.0	0	0.0	16	6.8	10	13.2	2	24.0
45-49	11	2.9	4	8.8	0	0.0	7	4.2	8	5.3	0	0.0
Total	265	100.0	76	100.0	2	100.0	244	100.0	91	100.0	8	100.0

Table 13. Percent Distribution of the Women who had Spontaneous and Induced Abortios by Level of Education

Level of Education	Spontaneous Abortions						Induced Abortions					
	0		1-2		3+		0		1-2		3+	
	n	%	n	%	n	%	n	%	n	%	n	%
No edu/ Pri. Comp.	96	35.2	44	51.6	0	0.0	86	35.2	47	51.6	7	87.5
Sec. Comp.	39	15.6	10	11.0	0	0.0	38	15.6	10	11.0	1	12.5
Sec. Comp. +	130	49.2	22	37.4	2	100.0	120	49.2	34	37.4	0	0.0
Total	265	100.0	76	100.0	2	100.0	244	100.0	91	100.0	8	100.0

The IUD and withdrawal are the most commonly used contraceptive methods- modern and traditional methods-. These results are in accord with some other research findings (1,4-8).

Modern method use increases by age and is most prevalent in the 35-39 age group, it reaches 84.6%. In these years as the number of desired children is completed, modern method use increases and remains high. Traditional method use steadily increases in 15-29 years. It decreases after 30-34 years and peaks in the 45-49 age group. The results are similar to some other researches' results (5,6). All these indicate that the choice of contraceptive methods is closely related to the condition of fertility.

Modern method use leads traditional method use (1,8). According to the results of the 1993 TDHS, it is most prevalent in the 30-34 age group, while traditional method use peaks in the 35-39 age group. Modern methods are practised more frequently than traditional methods in every years except the 15-19 and 40-49 age groups (1).

The IUD is the most commonly used modern method (34.7%). The condom and pill follow the IUD use (16.9 and 11.4 percent respectively). Withdrawal is the most widely used traditional method (9.6%). The results are in accord with some other researches' results (1, 4-12). Considering age patterns, the IUD use is not common in 15-19 years comparing to the pill and condom use. It indicates that, because of medical reasons, IUD is not preferred at the beginning of the fertile period. Modern method use is more frequent than traditional method use in every age group. According to the 1993 TDHS and some other field surveys, modern method use is more than traditional method use (1,6,7).

Current use increases directly with education. In all levels of education modern method use is more than traditional method use. Women with a primary or higher education are six times more likely to use modern methods than traditional methods, especially the IUD. These results are similar to those of some other results (1,6,7).

Use of contraception is also affected by number of living children. As far as the number of living children increases, modern method use increases and traditional method use decreases. Among women who do not have any children, traditional method use is 60%. Reaching the number of desired children determines

the traditional method use. The results are in accord with some other results (1,6-8).

In general, most of the current users are pleased with their choice of method. Most of the problems reported for modern methods are for the IUD and for the traditional methods for withdrawal (63.0% and 21.2% respectively). Among IUD and pill users, health concerns are leading causes. This may be reflect inappropriate counseling. According to the other results of different researches, the pill is the only method that accounts for a large part of the problem that causes side effects among other methods (1,7).

Among the sources for contraceptive methods, Mother and Child Health/Family Planning and Primary Health Care Units are the major suppliers of modern methods. Government hospitals, private doctors and private hospitals, other private sector sources and pharmacies come afterwards.

Contraceptive discontinuation changes due to reasons such as being pregnant, to become pregnant, side effects, more effective method and husband disapproval. Major reason for discontinuation of the traditional method is becoming pregnant and for the modern method the major reason is to become pregnant. Side effects are other reasons that affect the discontinuation of the modern method. In other researches, side effects are the leading causes for the discontinuation of the IUD and pill (1,3,4). This may be due to inappropriate counseling and type of services.

The desire for pregnancy changes according to number of living children that women have. Consequently, the women who have no children want to be pregnant, whereas the women who have three and more children do not. The level of education inversely affects the desire for pregnancy.

Among women who are included in this research, 52.1% have had abortion at some time in their lives. Induced abortions account for 29.7% of these abortions. The high value of induced abortions is similar to that of other research findings (1,3,4,7).

Age directly affects induced abortion while level of education inversely affects it. According to the results of the 1993 TDHS, level of education directly affects induced abortions, but among the women who have education, 63.9% are primary and secondary graduate and more, whereas in our research, 95.1% of women are primary and secondary and more graduate.

Consequently, it is very hopeful that the modern method exceeds the traditional method use, but it is closely related to the level of education and number of living children. Withdrawal is still the major traditional method that women currently use. The number of de-

sired children determines the choice of contraceptive method and traditional methods that are used after having the desired number of children. In order to prevent induced abortions, modern method use should be emphasized in the late stages of fertile period.

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A STUDY ABOUT THE FIRST AID KNOWLEDGE OF THE PARENTS HAVING PRE-SCHOOL CHILDREN

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SUMMARY

The purpose of this study is to determine the first aid knowledge of the parents having pre-school children and how this knowledge affects the first aid applications. The data is obtained by asking questions with questionnaire method to the parents of 173 children going to six pre-schools in Ankara-Turkey in the term April-June 1997 who are aged between 33-80 months (with an average of 60.41 months) and 84 of which are girls and 89 of which are boys. 11.8% of the parents included in the study find their first aid knowledge sufficient. Furthermore, 69.4% of the parents stated that they had no first aid training. Besides, 60.4% of the parents stated that they have faced situations requiring first aid for their children. The answers of the parents about various first aid applications are statistically compared between the parents who had first aid training and those who did not. The difference between the findings relating to first aid applications such as nosebleed ($p<0.01$), burn ($p<0.05$), fractures ($p<0.001$), foreign substance entrance to the ear or nose ($p<0.01$), drinking any caustic materials ($p<0.01$), insect stinging and biting ($p<0.05$), fainting ($p<0.001$), sharp object injury on the body ($p<0.001$) has been found significant depending on the "right" answers of the trained group. In accordance with the findings, first aid training is determined to be necessary especially for the parents of pre-school children. For this reason, we think it to be useful for the parents to be appropriately trained with first aid programs.

Key words: Pre-school children, first aid, parent knowledge

The houses are the places where little children learn about the world surrounding them in the first years of their lives and where they also meet the first accidents. The children may be subject to innumerable accidents in the house environment. Falls, strikes, burns and poisoning are some of those accidents (1).

Children are subject to various accidents at each age, but it is possible to protect the children and to save their lives with some simple precautions taken against various accident types in the house, the game place, the school (2). In spite of the precautions taken, these situations are frequently met. It must not be forgotten that to make a healthy-born child live healthy and to protect him or her from many dangers is in the hands of the parents (2). The parents are individuals who are high at risk probable to meet situations that require first aid for their children. For this reason, they have to know all details of first aid applications.

Sometimes, first aid applications and emergent treatment applications are confused. First aid is a set of applications that must be performed by the individuals whether they have had a health education or not. First aid is defined as the applications made without medicine in case of any life-threatening situation or in case of any accident until the aid of health personnel is obtained with the purpose of saving the life or preventing the situation's getting worse (3).

The human being may meet situations requiring first aid in any part of his or her life. It is possible to save life with first aid that consists of simple but effective and important applications those must be carried out in time.

METHODS

This study is carried out with the purpose of evaluating the first aid knowledge of the parents of the

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children going to pre-schools and its effects in the first aid applications.

346 parents, 173 mothers and 173 fathers, of 89 boys (51.4%) and 84 (48.6%) girls going to six pre-schools in Ankara-Turkey in the term April-June 1997 who are aged between 33-80 months (with an average of 60.41 months) were the subjects of this study.

The data is collected by applying the questionnaire form, whose pre-experiment was made, to the parents who are interviewed face to face. After data coding is performed, simple and cross tables are constituted and the significance of them are examined by calculating the chi-square (χ^2) values of the findings.

In the questionnaire form, multiple choice questions about the personal information's such as the educational situation, profession of the parents, if there is anybody among the relatives employed in the health sector, if any, their degree of relationship were included. Furthermore, multiple choice questions about first aid training such as if the parents have had a first aid training before. This training can be classified as a part of their undergraduate education, a part of the military service of the fathers and as an obligatory part of the driving license courses for the parents who has driving licenses. The period of the education they had, the first aid sources they made use of, if they have adopted their first aid knowledge sufficient or not and the subjects who think they lack are also included in

the questionnaire. On the other hand, multiple choice questions are asked if the parents have met any situation requiring first aid, if they had, what kind of situations they have met and the method of intervention they have used in such cases.

Also sixteen first aid requiring situations like foreign substance entrance into the trachea, absence of breathing etc. are asked to the parents. One right, one wrong, one stating no idea and an open ended choice are given as alternatives for their answers.

RESULTS

The distribution of the parents who are subject to this study in respect of educational levels, their professions and having relatives employed in the health sector are given in Table 1, Table 2 and Table 3 respectively. Table 4, Table 5 and Table 6 are related to the first aid training knowledge of the parents, if they had first aid training, where they had first aid training and their training periods.

The parents capability of making use of first aid references and the type of first aid reference they use are presented in Table 7 and Table 8.

The distribution of the parents who met cases requiring first aid and if they had, the type of first aid cases they met are shown in Table 9 and Table 10. Finally, Table 11 shows how their first aid training affects their first aid application in cases requiring first aid.

Table 1. Distribution of parents in respect of educational levels

EDUCATIONAL LEVEL	Mother		Father		TOTAL	
	n	%	n	%	n	%
Primary School Graduate	2	1.2	4	2.3	6	1.7
Secondary School Graduate	6	3.5	8	4.6	14	4.0
High School Graduate	75	43.3	53	30.6	128	37.0
University Graduate	90	52.0	108	62.4	198	57.2
TOTAL	173	100.0	173	100.0	346	100.0

Table 2. Distribution of parents in respect of their professions

PROFESSION	Mother		Father		TOTAL	
	n	%	n	%	n	%
Health - related professions	8	4.6	7	4.0	15	4.3
Other professions	165	95.4	166	96.0	331	95.7
TOTAL	173	100.0	173	100.0	346	100.0

Table 3. Distribution of parents in respect of having relatives employed in the health sector

STATE OF HAVING RELATIVES EMPLOYED IN THE HEALTH SECTOR	Mother		Father		TOTAL	
	n	%	n	%	n	%
YES	67	38.7	59	34.1	126	36.4
NO	106	61.3	114	65.9	220	63.6
TOTAL	173	100.0	173	100.0	346	100.0

Table 4. Distribution of parents who had first aid training or not

STATE OF HAVING FIRST AID EDUCATION	Mother		Father		TOTAL	
	n	%	n	%	n	%
Yes	47	27.2	59	34.1	106	30.6
No	126	72.8	114	65.9	240	69.4
TOTAL	173	100.0	173	100.0	346	100.0

Table 5. Distribution of parents in respect of first aid training places

PLACE OF FIRST AID EDUCATION	Mother		Father		TOTAL	
	n	%	n	%	n	%
During Education	17	36.2	16	27.1	33	31.1
During Military Service	-	-	11	18.6	11	10.4
Driving-License Courses	30	63.8	32	54.2	62	58.5
TOTAL	47	100.0	59	100.0	106	100.0

Table 6. Distribution of parents in respect of first aid training periods

FIRST AID TRAINING PERIOD	Mother		Father		TOTAL	
	n	%	n	%	n	%
Less than 10 Hours	36	76.6	48	81.3	84	79.2
10-20 Hours	7	14.9	6	10.2	13	12.3
More than 20 hours	4	8.5	5	8.5	9	8.5
TOTAL	47	100.0	59	100.0	106	100.0

Table 7. Distribution of parents in respect of making use of first aid references

FIRST AID REFERENCE USED	Mother		Father		TOTAL	
	n	%	n	%	n	%
YES	119	68.8	92	53.2	211	61.0
NO	54	31.2	81	46.8	135	39.0
TOTAL	173	100.0	173	100.0	346	100.0

Table 8. Distribution of parents in respect of the type of first aid reference used

TYPE OF THE FIRST AID REFERENCE USED (n=211)	Mother		Father		TOTAL	
	n	%	n	%	n	%
Publications	33	27.7	32	34.8	65	30.8
Visual/Audible Broadcast	13	10.9	12	13.0	25	11.9
Reference Person	12	10.1	7	7.6	19	9.0
Other*	61	51.3	41	44.6	102	48.3
TOTAL	119	100.0	92	100.0	211	100.0

* The parents in this group stated that they used more than one reference.

Table 9. Distribution of parents if they met cases requiring first aid or not

MEETING A CASE REQUIRING FIRST AID	n	%
Yes	209	60.4
No	137	39.6
TOTAL	346	100.0

Table 10. Distribution of parents in respect of the type of first aid cases they met

CASES MET n=209*	n	%
High fever	179	85.6
Nosebleed	81	38.8
Burns	60	28.7
Head injuries	43	20.6
Insect stinging and biting	30	14.4
Foreign substance entrance into trachea	25	12.0
Foreign substance insertion into the nose or ear	24	11.5
Others**	63	30.1

* Since more than one choice is marked, percentage of each one is taken separately.

** This group includes cases requiring first aid such as absence of breathing, ear bleed, electrical shock, fractures, drinking caustic substance, fainting, foreign substance injury on the eye, fishing line injury on the hand, sharp object injury on the body.

Table 11. Distribution of the first aid application of the parents with respect to their first aid knowledge in cases requiring first aid

	FIRST AID TRAINING		Not Trained		TOTAL	
	Trained (n=106)		(n=240)			
	n	%	n	%	n	%
Foreign Substance Entrance into the trachea						
Right	76	71.7	155	64.6	231	66.8
Wrong	13	12.3	25	10.4	38	11.0
Does not know	17	16.0	60	25.0	77	22.3
	$X^2=3.440$ df=2 p>0.05					
Absence of breathing						
Right	78	73.6	153	63.8	231	66.8
Wrong	23	21.7	60	25.0	83	24.0
Does not know	5	4.7	27	11.3	32	9.2
	$X^2=4.792$ df=2 p>0.05					

Continued of Table 11

	Trained		Not Trained		TOTAL	
Nosebleed						
Right	69	65.1	113	47.1	182	52.6
Wrong	21	19.8	77	32.1	98	28.3
Does not know	16	15.1	50	20.8	66	19.1
	$X^2=9.713$ df=2		p<0.01			
Ear bleed						
Right	8	7.5	14	5.8	22	6.4
Wrong	48	45.3	66	27.5	114	32.9
Does not know	50	47.2	160	66.7	210	60.7
	$X^2=12.002$ df=2		p<0.01			
Burns						
Right	99	93.4	202	84.2	301	87.0
Wrong	1	0.9	13	5.4	14	4.0
Does not know	6	5.7	25	10.4	31	9.0
	$X^2=6.213$ df=2		p<0.05			
Electrical Shock						
Right	103	97.2	222	92.5	325	93.9
Wrong	0	0	1	0.4	1	0.3
Does not know	3	2.8	17	7.1	20	5.8
	$X^2=2.913$ df=2		p>0.05			
Fractures						
Right	71	67.0	102	42.5	173	50.0
Wrong	29	27.4	122	50.8	151	43.6
Does not know	6	5.7	16	6.7	22	6.4
	$X^2=18.215$ df=2		p<0.001			
Head Injuries						
Right	67	63.2	109	45.4	176	50.9
Wrong	9	8.5	14	5.8	23	6.6
Does not know	30	28.3	117	48.8	147	42.5
	$X^2=12.592$ df=2		p<0.01			
Foreign substance insertion into the ear or nose						
Right	76	71.7	129	53.8	205	59.2
Wrong	4	3.8	14	5.8	18	5.2
Does not know	26	24.5	97	40.4	123	35.5
	$X^2=9.818$ df=2		p<0.01			
Drinking Caustic Substance						
Right	24	22.6	24	10.0	48	13.9
Wrong	40	37.7	117	48.8	157	45.4
Does not know	42	39.6	99	41.3	141	40.8
	$X^2=10.483$ df=2		p<0.01			
Insect stinging and biting						
Right	25	23.6	26	10.8	51	14.7
Wrong	62	58.5	161	67.1	223	64.5
Does not know	19	17.9	53	22.1	72	20.8
	$X^2=9.564$ df=2		p<0.05			
High Fever						
Right	102	96.2	233	97.1	335	96.8
Wrong	1	0.9	0	0	1	0.3
Does not know	3	2.8	7	2.9	10	2.9
	$X^2=2.272$ df=2		p>0.05			
Faints						
Right	70	66.0	84	35.0	154	44.5
Wrong	12	11.3	39	16.3	51	14.7
Does not know	24	22.6	117	48.8	141	40.8
	$X^2=29.425$ df=2		p<0.001			

Continued of Table 11

	Trained		Not Trained		TOTAL	
Foreign substance entrance into the eye						
Right	23	21.7	46	19.2	69	19.9
Wrong	34	32.1	68	28.3	102	29.5
Does not know	49	46.2	126	52.5	175	50.6
	$X^2=1.158$ df=2 p>0.05					
Fishing line injury on the hand						
Right	31	29.2	50	20.8	81	23.4
Wrong	25	23.6	49	20.4	74	21.4
Does not know	50	47.2	141	58.8	191	55.2
	$X^2=4.354$ df=2 p>0.05					
Sharp object injury on the body						
Right	56	52.8	75	31.3	131	37.9
Wrong	25	23.6	69	28.8	94	27.2
Does not know	25	23.6	96	40.0	121	35.0
	$X^2=15.431$ df=2 p<0.001					

DISCUSSION

Pre-school children are frequently subject to accidents. Their mobility, curiosity and will to learn and examine everything cause them to be frequently subject to accidents. Childhood accidents not only result in physiological diseases but also cause some emotional problems on the child. For this reason, first of all it is necessary to arrange the environment surrounding our children in a manner to prevent their being subject to accidents. In spite of this, in case of a situation requiring first aid, it would be possible to prevent the disabilities and to save lives with right and appropriate first aid applications.

Our study aims to determine the first aid knowledge of the parents of pre-school children and how it affected the first aid applications.

It is found that 52.0% of the mothers and 62.4 % of the fathers in the study group are university graduates (Table 1) and only 4.6% of the mothers and 4.0% of the fathers included in our sampling are employed in the health sector (Table 2) and 38.7% of the mothers and 34.1% of the fathers had relatives having professions in the health sector (Table 3). These data obtained shows us that the professions of the majority of the parents are not related with the health sector and that a very small group has the chance of receiving information from their relatives.

27.2% of the mothers and 34.1% of the fathers have indicated that they have had first aid training (Table 4). It is seen that more than 50% (63.8% of the mot-

hers and 54.2% of the fathers) has made use of courses such as driving license courses (Table 5). It is determined that the first aid training period of 76.6% of the mothers and 81.3% of the fathers is less than 10 hours (Table 6). It is observed that 61.0% of the parents had a first aid reference they made use of (Table 7) and that 48.3% of them had more than one references (Table 8). The findings show that the majority of the parents (69.4%) did not have any first aid training and that the training periods of the parents who had first aid training are very short and received from courses such as driving license courses. It is seen that majority of the mothers (68.8%) who spent more time with their children more than the fathers are using a first aid reference and that these mothers (51.3%) make use of more than one references. These findings show that the mothers want to train themselves about first aid.

60.4% of the parents stated that they have met cases requiring first aid for their children (Table 9). When the first aid cases the parents met are examined, it is seen that the most frequently met three cases are high fever (85.6%), nosebleed (38.8%) and head injuries (28.7%) (Table 10). It is also stated in the study of Nazik carried out in 1997, that the most frequently met house accidents are nosebleed (28.8%) and injuries (cut injury 26.3%, crush injury 22.9%) (4).

88.2% of the parents included in our study state that they do not find their first aid knowledge sufficient. It is also stated in the study performed in 1992 by

Şimşek et al aiming to determine the first aid knowledge levels of the pharmacists, that only 16.8% of the pharmacists find themselves sufficient about first aid applications and that they had lack of knowledge about any subjects requiring first aid (5). Furthermore, in the study performed in 1996 by Özçelikay et al aiming to determine the first aid knowledge levels of the university students, it is seen that 84.7% of the students did not find themselves sufficient (6). The results of both studies show resemblance with our findings.

The findings obtained as the result of our study show that the majority of the parents meet cases requiring first aid for their children but they do not find their first aid knowledge sufficient. Parents having preschool children must take precautions against possible accidents taking into account the developmental features of their children and remembering about their mobility and must try to increase their first aid knowledge.

When the parents in our study are asked to rank the subjects about which their knowledge is lacking, this rank is observed to be as: ear bleed, absence of breathing, foreign substance entrance into the trachea, caustic substance drink, electrical shock, foreign substance injury on the eye, foreign substance insertion into the ear or nose, head injury, sharp object injury on the body, faints, fractures, burns, insect stinging and biting, nosebleed, fishing line injury on the hand and high fever. In accordance with the rank made, it is observed that the parents pay more importance to the cases which are less frequently met but which cause vital danger more than the cases which are more frequently met.

The parents in the study group are determined to give right answers because of their statements given below with their percentages respectively: 41.9% stating that the person applying first aid need not to have a health training, 24.0% stating that the first aid and emergent treatment are not applications that can be performed in any conditions, 45.1% stating that the emergent treatment includes applications that should be performed only by the persons that are employed in the health sector, and 86.7% stating that the first aid includes applications without medicine made until the help of health personnel is obtained. The findings show that the parents do not know the difference between first aid and emergent treatment very well.

While 58.4% of the parents state that they have a first aid case in their houses, 41.6% stated that they do not keep first aid materials regularly. Only 9.2% of the parents gave right answers about the materials that should be kept in the first aid board / case. 59.8% of the group which gave wrong answers stated that alcohol should be kept in the first aid board/case and 30.9% stated that medicine should be kept in the first aid board/case. However, in accordance with the literature, it is known that medicine should not be kept in the first aid board/case and alcohol is not needed (3). The findings show that the parents do not have sufficient knowledge about the materials that should be kept in the first aid board/case.

When the findings about the first aid applications performed by the parents in the study group are compared, no significant statistical difference is observed between the applications of the mothers and fathers. For this reason, the differences between the applications of mothers and fathers are not separately evaluated and the data is examined generally.

The findings about the first aid applications performed by the trained and untrained parents determined that the significant difference between the trained and untrained groups about nosebleed, burns, fractures, foreign substance insertion into the ear or nose, drinking caustic substance, insect stinging and biting, fainting, sharp object injury on the body resulted from the excess "right" answers of the trained group (Table 11). It is also determined that the significant difference between the trained and untrained groups about ear bleed and head injuries resulted from the excess "I don't know" answers of the untrained group (Table 11).

In cases of foreign substance entrance into the trachea and absence of breathing, it is observed that the majority of both trained and untrained groups knew the right application. But, some of the parents indicated that they apply useless methods in cases of foreign substance entrance into the trachea, stating "I make him/her look upwards and pull the hair back of his/her neck". 65.1% of the trained and 47.1% of the untrained parents know the right application in case of nosebleed. 66.7% of the untrained group stating that they did not know the application for cases of ear bleed caused a significant difference between the trained and untrained groups. While 93.4% of the trained and 84.2% of the untrained parents know the right application for the cases of burns, 5.4% of the untrained group performs wrong applications and 10.4% does

not know what to do. Fernandez et al (1997) stated in their study that the burns constituted a risk in the urban places rather than the rural places and that 65.8% of the burns take place in the house and especially in the kitchen. It is stated in the study that only 21.9% of the burns received the correct first aid after the accident (7). A similar study has been carried out by Forjuoh et al in 1995 and it is found that 92% of the burns took place in the house and especially in the kitchen (51%). It is found that in 30% of cases, "cool" water is applied to the burned area and that traditional methods are mostly applied (8). In the study of Sorensen & Vindenes carried out in 1993, it is stated that 57 of the 60 children who were in the burn units of the hospitals between 1989-91 because of high degree burns were below 5 and that all injuries took place in the house and that 60% of these children were immediately subjected to cold water treatment (9). Forjuoh et al (1996) examined the burn-related physical impairments and disabilities in the childhood via the knowledge obtained from the mothers and determined that 113 (17.4%) of the 650 burn cases have resulted in physical impairment and 5 (1 %) cases have resulted in physical disability. As the result of the study, it is indicated that training aiming appropriate treatment of burn cases could prevent physical damages and that a strong relation existed between the mother training and child morbidity (10).

For first aid applications in cases of electrical shock, 93.9% of the parents indicated that the first to be done is to disconnect the contact with electricity, being independent of the effect of training. In cases of fractures, 67% of the trained group knew the right application, but 50.8% of the untrained group preferred to take the child to a health organization without any applications. However, it is known that in case the patient is moved without fixing the broken region, the ends of the broken bone could cut the veins and nerves (3,11). In first aid applications about head injuries, although the right answers of the trained parents (63.2%) are more than that of the untrained (45.4%), the difference between the trained and untrained groups arise out of the excess "I don't know" answers of the untrained group. 71.7% of the trained and 53.8% of the untrained group know the right application for cases of foreign substance insertion into the nose or ear, but 40.4% of the untrained group state that they do not know what to do. For example wrong first aid

applications such as "dropping oil into the ear" are met among the answers given to this question. In spite that a significant difference existed between the right answers of trained (22.6%) and untrained groups (10%) about the cases of drinking caustic substance, it is worth to pay care that the ones who do not know what to do and the ones who apply wrong methods constitute the majority. But, as indicated by Güler & Bilir (1992) and Güngör (1987), the ones who are not conscious, who are in case of an infantile convulsion, who have drunken a caustic or corrosive substance or a petroleum product, who are poisoned with a substance including strychnine should never be made to vomit. Among the answers received, wrong answers such as "making the child drink water, milk, weak alcohol, or olive oil" were included. In spite that significant difference existed between the right answers of the trained or untrained groups about the insect bites or stings, it is found that the ones applying wrong methods constituted the majority in both groups. In a study, it is found that the right first aid method was not applied on 31% of 156 children whose average age was 6.8 who were taken to the hospital with snake bite suspect (12). In another study carried out by Plowman et al (1995), it is indicated that more than 50% of the people living in and around Utah could not apply first aid for cases of snake bite and that some of the ones used wrong methods such as tourniquet and ice application (13).

The necessary applications for high fever cases are known and applied by the great majority today. For this reason, no significant difference could be found between the trained and untrained groups. In applications for the cases of fainting, 66.0% of the trained group gave right answers but 48.8% of the untrained group did not know what to do. It is seen that the parents who are not trained about first aid suffer of great lack of knowledge about the cases of fainting which are cases that are frequently met in the daily life. It was astonishing to receive answers such as "I would give water including 1-2 drops of cologne". In the study of Senanayake & Peiris carried out in 1995, great importance was paid to the necessity of training the public about first aid and the convulsions, especially in childhood (14). The findings show that the half of the parents do not know the appropriate first aid to be applied in cases of foreign substance entrance in the eye or fishing line injuries in the hand. In first aid app-

lications for sharp substance injuries in the body, 52.8% of the trained group gave the right answers but 40% of the untrained group stated that they did not know the method that should be applied. As a first aid knowledge, the objects stung in the arms, chest, stomach and eye should never be removed (3).

The accidents met in the pre-school period generally result in injuries that could be prevented. The children of this age who are very mobile are subject to the risk of serious injuries because of their playing in unsafe areas and the lack of adult control. It is possible to minimize the accident risk with the simple precautions taken or if injury took place, to save the lives of children with simple first aid applications. The matter that should be firstly taken about the accidents is to prevent the accidents and to minimize the damages. In order to obtain this aim, the first thing that should be done is to train our children, parents, teachers and the ones responsible of arranging the environments of the children both in and out of the house (1). Priority should be given to increasing the first aid knowledge levels of mothers because of their dealing with their children more closely and spending more time with them (15, 16, 17). Based on the results of the study carried out by Nazik in 1997, it is determined to be important to prepare first aid hand book and face to face training of mothers during the first aid training for a continuous effectiveness. Films, slides, video tapes and documents relating to the first aid are available in the training units of Ministry of National Education and other organizations in our country. We think it to be useful to give provide training with the help of such

references via seminars, conferences and other activities about first aid. We find it also to be useful to provide first aid training for the parents via radio, television, press and Public Health Centers and to give public education via mobile vehicles. For such training programs, we think it to be appropriate to emphasize the simple precautions given below:

- The children must be kept away from places including flame such as stove, oven, etc. The studies carried out claim that the children should be trained to protect themselves against burns starting from very early ages (18)
- The poisonous materials and medicines should be kept in places where the children can not reach.
- Stairs, balconies and windows must always be safe for the children.
- The children must not be left alone in the kitchen or bathroom which are the places where most of the accidents occur.
- Small toys and other materials that the children can swallow must not be left in sight.
- The electricity sockets must either be at high places or closed with strong covers that the children can not open.

Furthermore, first aid applications that should be performed in cases of accidents that the children could be subject to should be emphasized in the training given. It must never be forgotten that the life of a child can be saved and disabilities that would remain for the whole life can be prevented with simple and easy applications.

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A SHORT HISTORY OF PSYCHIATRIC CLASSIFICATION

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SUMMARY

Classification has been a major area of interest in the field of psychiatry. This is mainly due to the lack of objective diagnostic tools such as laboratory findings or pathognomonic signs or symptoms. Psychiatrists have to rely on their subjective perceptions of human behaviors to reach a diagnosis. In pre-DSM-III era, there were no clear definitions of diagnostic categories and diagnostic reliability was very low. However, after DSM-III and its successors, and ICD-10, considerable increase in diagnostic reliability was achieved. These classification systems, on the other hand, sacrificed some other important aspects of classifications, such as validity and stability, to reach highly reliable diagnoses. Future classifications have to take etiology, predictive value in terms of prognosis and treatment, and validity of a classification into consideration.

Key words: DSM, ICD-10, Psychiatric classification, Reliability

PRE-DSM-III ERA

Although the study of human behavior is as old as recorded history, it was only within the last 200 years that mental disorders were considered within the boundaries of medicine. In middle ages, mentally ill people were seen as witches whose spirits were possessed by evil forces and most were the victims of excessively cruel treatments to free them from these forces. By the sixteenth century, with the emergence of renaissance, institutions were gradually being set up throughout the world to cater for mentally ill people (1). Especially after Pinel's the humanitarian approach in the 18th century, efforts were directed towards reintegration of mentally ill into the community. In the beginning of 20th century, with dramatic advances in medical sciences, medically oriented practitioners were concerned with isolating various categories of mental disorders. For instance, Charcot described vivid presentation of hysterical symptoms; Kahlbaum described hebephrenia; Krapelin divided major psychoses into two groups, namely, dementia praecox and

manic-depressive psychosis; Bleuler introduced the name of "schizophrenia" and broadened the concept of dementia praecox; Freud elaborated personality disorders and neurosis (1,2). Until 1952, many clinicians had presented individual articles with presentations of various typical cases to describe their own concepts and observations of various mental disorders. The diversity among these presentations led clinicians to seek for guidance for the criteria for different categories of mental disorders (3). In 1952, a giant step was taken in psychiatry and the first edition of DSM was published. DSM-I contained standardized names, codes and general guidelines for differential diagnosis. However, DSM-I was vague in its description of diagnostic categories and was still in search of pathognomonic symptoms for any given diagnostic categories (3, 4, 5).

The vagueness of diagnostic categories and lack of precise guidelines for differential diagnosis brought new arguments that led to further advances in classifications. First, so called "antipsychiatric movements", especially Szasz and Laing, seriously questioned the scientific nature of psychiatry and Beck (6) supported

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their arguments after explicitly demonstrating the low reliability of psychiatric diagnoses among clinicians. Second, studies concerning clinical, social, genetic and biochemical aspects of psychiatric disorders prompted the need for homogeneous samples in any given diagnostic category (4). Third, foundation of specific medical treatments for specific mental disorders, such as anti-psychotics for psychoses, anti-depressants for depression and lithium for manic-depressive psychosis, forced psychiatrists to use accurate diagnoses since diagnostic accuracy is the precondition of appropriate medical treatment (5). These and other shortcomings of DSM-I led to the development of DSM-II, ICD-8 and ICD-9 but all proved inadequate to solve these problems. The classificatory viewpoints of DSM-I, DSM-II, ICD-8 and ICD-9 were similar and derived from so called "classical view". In "classical view", first of all, unproven etiological factors such as psychoanalytic etiology were assumed to play important roles in the genesis and presentation of symptoms in many diagnostic categories. Secondly, the clinician had to choose only one diagnosis that may lead to insufficient categorization of some patients. Finally, since there were no formal definitions for differential diagnosis of a particular condition, clinicians still had to rely heavily on their own concepts (3, 4, 7).

THE PURPOSE OF PSYCHIATRIC CLASSIFICATION

Classification, in its original biological sense, is the process and the product of forming groups of entities. Classification in psychiatry serves for five purposes;

- 1) As a basis for communication within psychiatry.
- 2) For information retrieval,
- 3) As a descriptive system for the objects of study in psychiatry,
- 4) For making predictions,
- 5) As a source of concepts to be used in a scientific theory. Any classification that meets above criteria should also meet the criteria for the "adequacy" of this classification. These adequacy measures are;

1) Coverage which refers to the applicability of a classification to the domain of patients for whom it was intended,

2) Descriptive validity which refers to the degree of homogeneity of the category of behaviors, symptoms, personality characteristics etc. in a given category.

3) Predictive validity which refers the ability of a classification to make accurate predictions about the effectiveness of specific interventions for a particular patient,

4) Reliability. Among four criteria mentioned above, only reliability has been systematically studied (6, 8, 9). Besides being an essential feature of a good classification, reliability seems to be the basic problem of current classification systems and would be discussed in length (10, 11).

RELIABILITY PROBLEM IN PSYCHIATRIC CLASSIFICATION

To date Turkish psychiatrists have not established their own psychiatric classification system yet. Current classifications in use are strongly influenced by Western cultures and especially from English speaking countries. However, even in these countries there have been ongoing arguments about the reliability of psychiatric diagnosis. One would expect that the extent of this problem would be much greater in a non-English speaking, culturally diverse and socially different cultures such as Turkey or China.

Reliability, a bio-metric concept, refers to the ability of two observers to agree on what they see. A classification is said to be highly reliable only if most clinicians facing with a patient, regardless of the background of the clinician, assign same diagnosis to the patient. However, in the literature, the problem on reliability, of diagnoses was observed among and within cultures. Many cross-cultural studies indicated that there has been diagnostic discrepancies among British and US psychiatrists (8), British, French and German psychiatrist (9), psychiatrists from Colombia, Czechoslovakia, Denmark, India, Nigeria, People's Republic of China, Union of Soviet socialist republic, US and Britain (1). The only cross-cultural study from Turkey as Eker's (12, 13) comparison of two centers from Turkey with other two centers from US. He found that American psychiatrists were prone to perceive symptoms as more severe than their Turkish colleagues.

In addition to these cross-cultural differences, there have been studies concerning the differences within a culture in terms of diagnosis and symptom severity. In an early study, Beck (6) reported low to moderate diagnostic agreement on different categories of mental disorders. In his study, diagnostic agreement was 63%

for neurotic depressive reaction, 55% for anxiety reaction, 54% for sociopathic disturbance, 38% for personality trait disturbances. On the other hand, the comparison of major divisions (psychosis, neurosis and character disorders) of diagnostic categories were high (70%) in this study. Similar findings were reported in many subsequent studies (c.g., 14).

THE SOURCES OF LOW RELIABILITY

The theoretical analyses of the reliability problem indicate five different sources that lower the reliability (3). These are;

- 1- Subject variance: This kind of error occurs when the patient actually has different conditions on different occasions. Delirium, with its fluctuating course, is a typical example of this type of error.
- 2- Occasion variance: This kind of error occurs when the patient is in different stages of the same condition on different occasions as can be seen in bipolar disorder.
- 3- Information variance: Different sources of information may lead to a difference in diagnostic decision.
- 4- Observational variance: The kind of error is mainly related with the observers themselves. Kendell (1973) stated that, there might be differences among clinicians in the degree of correspondence between symptoms and prototypes they demand for to reach a diagnosis.
- 5- Criterion variance: There may be differences in the formal inclusion and exclusion criteria among clinicians that causes diagnostic confusion.

Although subject, occasion and information variances should not be ignored, studies have shown that not only these variances may be controlled with adequate training or structured interviews, but their impacts on overall reliability measures are low. Criterion variance can also be controlled with a common diagnostic classification. The fourth variance, however, is found to be the most important source of error that lowers the reliability.

Observational variance is especially important in cases that happen to be an "ambiguous" case that hampers clinician's ability to reach a diagnosis. Cantor et al. (7) has extensively studied the theoretical

analysis of being "ambiguous". According to her, every clinician develops prototypes of categories which are based on their previous theoretical orientation, training and experience. If they are faced with a case closely resembling their prototype for a category, they easily diagnose the case. However, if the case is a less prototypical example of a category, whose symptoms and signs either overlap with many categories or are inadequate to fulfill the requirements of any category, diagnosis becomes a hard task for the clinician. At this point, she concluded that, clinicians may be influenced by variables other than incoming information from the patient. To illustrate her point an example from biology may help; apple or orange are typical examples of fruits and may can easily categorize them as fruits or vegetables as these two share many features from both families. Cantor argues that our experiences with these "vegetables" would determine how we would categorize them.

Many studies support Cantor's observations about the impact of being "ambiguous" on diagnostic decision. Soykan et al. (15) compared five different institutions from Turkey and found that clinicians assign similar diagnosis and perceive similar symptom severity in all centers for typical patients. In contrast, in case of atypical patient, there were significant discrepancies among centers in terms of diagnosis and symptom severity. Interestingly, these discrepancies were much less pronounced within the same institution suggesting strong impacts of theoretical orientation and training in decision making process. Eker (13) has found that theoretical orientation of the centers from Turkey and US was the most important single factor in the choice of diagnosis rather than being American or Turkish. Similarly, Gale (16) compared the diagnosis of clinicians from the same institution and found that diagnoses given to the patients were mainly determined by the therapist's theoretical orientation.

The level of experience also effects the diagnosis and decision making process. Experienced psychiatrists tend to depend on subjective experience rather than relying on objective, low risk taking strategies and their concept of a particular diagnosis contains much more features than a novice's concept (17). Finally, personal features of the patient such as social class, gender also influence diagnostic decision (16, 18, 19). Lee and Tennerlin (18) found that psychiatric residents who listened to an interview with a lower

class design gave the man a poorer diagnosis and prognosis than the residents who listened the same tape, but with a middle-upper class design. Similarly, when a black man from low class seeks for psychiatric help, his diagnosis would most probably be psychotic rather than neurotic (16). There is also a tendency of therapists to perceive males as antisocial and women as hysterical even when the patient has identical features (19).

POST-DSM-II ERA

Beginning with DSM-II, another approach for the classification of mental disorders, "descriptive view", dominated the field of psychiatric classification to overcome some shortcomings of "classical view". In the following editions of DSM-III, DSM-III-R and DSM-IV, and in ICD-10 strong impact of "descriptive view" could be traced. The "descriptive view" relies heavily on symptoms and signs themselves rather than their relations with unproven etiological theories. Furthermore, since specific inclusion and exclusion criteria were given in DSM-III and following classifications, only task for the clinician is to determine the presence or absence of specific clinical phenomena and to apply the comprehensive rules provided for a particular diagnosis. Multi-axial approach allows clinicians to give multiple diagnoses as well. This view is compatible with widely accepted vulnerability/stress model and bio-psycho-social etiological approach, as multiple and various etiological factors might be present in one case (1, 7, 11).

After the emergence of DSM-II, considerable increase in diagnostic reliability was achieved. Overall kappa's for axis I and axis II diagnoses were found to be higher than those for previous classifications, and were 0.72 and 0.64, respectively. However, there were some categories such as somatoform, dissociative, factitious disorders that did not achieve good level of reliability (11). In Soykan's study (15), along with the atypical case whose findings are summarized above, clinicians were asked to diagnose two typical cases, one with the diagnosis of schizophrenia and another with dysthymia, with DSM-III classification. Diagnostic agreements were high among centers; 82% diagnosed the first case as schizophrenia and 68% diagnosed the second case as dysthymia. Additionally, most of the clinicians who did not assign these diagnoses we-

re in agreement in general diagnostic categories namely, psychosis and affective disorder for the first and the second case, respectively.

DSM-III was an innovation in psychiatric classification; it provoked considerable arguments that even promote DSM-III itself. Revised version of DSM-III was published in 1987 and the fourth version, DSM-IV, in 1994. ICD system followed the approach presented in DSM-III and ICD-10 was published in 1992. Although DSM system is widely accepted around the world, it was only intended to serve American psychiatrist. Mutual interactions among cultures led DSM-IV to include cultural aspects and the differences between ICD-10 and DSM-IV lessened. Both DSM-IV and ICD-10 have proved to be highly reliable across centers and even countries (20).

COMMON PITFALLS OF DSM AND ICD CLASSIFICATION SYSTEMS

In psychiatry no matter how scientifically and rigidly we use scales to estimate the patients' pathological symptoms, we are still doing pattern recognition. Every person is unique and no clinician can claim that every patient clearly fits diagnostic criteria. However, both ICD-10 and DSM-IV give the false sense of precision and completeness in diagnostic process. Eventually, psychiatrists may start to forget to assess the patients as human beings but see them as a cluster of symptoms and treat the diagnosis assigned to them. The strict focus on diagnosis made psychiatry boring for the students and their teachers and limited the creativity of the clinicians as well. Many clinicians come to a conclusion about the need to merge the empirical psychiatry of contemporary classification systems with the story and actual observation of the patients. There is a bulk of evidence and information about the personal characteristics of any diagnostic category that is awaiting for clinicians to merge with current classification systems. The inclusion of defense mechanisms into DSM-IV classification is a good example of this kind of merger (20, 21).

The DSM-IV and ICD-10 criteria are simple provisional agreements that are arrived by a group of experts on what characteristic features must be present to make a diagnosis. Both will remain arbitrary as long as clinicians are ignorant about pathophysiology and etiology. Although really high levels of reliability we-

re achieved with these classifications, in relation with the arbitrary and atheoretical nature of these classifications, validity may be sacrificed. Validity refers to the ability of a classification system to make accurate predictions on prognosis, response to treatment and ultimately etiology. Psychodynamically oriented clinicians have objected that DSM has sacrificed clinically important psychodynamic concepts that, indeed, led to major advances in psychiatry. Biologically oriented psychiatrists have also objected to the validity of DSM. Their argument was about the arbitrary nature of the definitions, which are not rooted in information about biological causes (11, 21). Similarly, "stability", the concordance between diagnoses in the same individual at two points in time, may also be sacrificed with the arbitrary, atheoretical nature of descriptions. Personality disorders, by definition, are supposed to be stable diagnoses over time; however, in a study searching for the stability of DSM-III-R diagnoses of personality disorders, only 51% of cases continued to meet the criteria for personality disorder 2½ years later. Moreover, some personality disorders at index evaluation were found to be more correlated with other personality disorders than itself at follow up evaluation (22).

ICD-10 and DSM-IV systems use "all or none" approach in diagnosing. One either fits or doesn't fit to a diagnosis. However, in actual clinical practice, there are many cases that near-miss a diagnosis but need treatment. Some headache sufferers who do not fulfill the criteria for depression but highly responsive to anti-depressant treatment may be an example of this kind of cases. Similarly, Kendler et al. (23) conducted a study to search for the discriminative value of DSM-IV criteria of "2 weeks' duration", "five symptoms" and "clinically significant impairment" for the boundaries between major depression and milder depressive states. They found that neither of the criteria was actually valid to discriminate two conditions;

rather, their results suggest that major depression and milder depressive states were on a continuum of depressive symptoms of varying severity and duration. A study from Turkey also supported the arbitrary nature and the lack of value of some DSM-III-R symptoms in discriminating anxiety disorders from depression. In this study, not only the symptoms seen in anxiety disorder patients overlapped with those of depressive disorder patients, but a major symptom of depression, anhedonia, was of no value in discrimination of two conditions as well (24).

CONCLUSION

Neither DSM or ICD systems nor psychiatric classifications in general have reached to its final shape yet. This is not a pitfall but is an indication of strength in psychiatry as it reflects dynamic interaction among clinical studies, changing societal norms and behaviors and development of new categories. Both systems were born in Western cultures and mainly consist of diagnoses that are applicable to Western cultures. Most of these diagnoses are present around the world with some differences in clinical presentation, incidence and prevalence or symptom thresholds to reach a diagnosis. However, some others do not apply to some cultures. For example, China excluded the diagnosis of "avoidant personality disorder" from their classification. The symptoms and behaviors described in this category are, indeed, expected behaviors for this culture (25).

In conclusion, it is clear that psychiatrists should use current classification systems, i.e. ICD-10, to reach a diagnosis and to communicate with their colleagues. However, they should also keep in mind that classifications are not developed for the sake of patients but for the psychiatrist; patients have nothing to do with classification, but they expect respectful, genuine and caring psychiatrists that listen and treat them as human beings.

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HYPOKALEMIC PARALYSIS; DIFFERENT ETIOLOGIES, SIMILAR CLINICAL PRESENTATIONS

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SUMMARY

Although the commonest form of hypokalemic paralysis is the hereditary variety, some patients during course of thyrotoxicosis or with chronic potassium depletion, may exhibit episodic weakness. Approach to the patient with hypokalemic paralysis should be potassium replacement therapy and a careful search for the etiology. In this report two hypokalemic paralysis cases one with hyperthyroidism and the other with primary aldosteronism are described.

Key words: Hypokalemic paralysis, thyrotoxicosis, primary aldosteronism.

Acute hypokalemic paralysis is an uncommon cause of acute weakness and is associated with low serum potassium levels (1,2). Most cases are due to familial hypokalemic paralysis, however, sporadic cases are associated with diverse underlying etiologies including thyrotoxic periodic paralysis, barium poisoning, renal tubular acidosis, primary hyperaldosteronism, licorice ingestion and gastrointestinal potassium losses (3-21). The approach to the patient with hypokalemic paralysis includes a vigorous search for the underlying disease, potassium replacement therapy during attacks and treatment of the etiologic factor.

In this report, two hypokalemic paralysis cases with different etiologies are described.

CASE 1

A 29 - year - old man, presented to the emergency department complaining of inability to move either leg after awakening in the middle of the night. He had a history of a similar but less severe episode which lasted for five hours and resolved spontaneously, two weeks before. He had been experiencing weight loss of about four kilograms, palpitation and tremor for the last one month, and he also complained of constant muscle pain and weakness, tiredness while performing routine daily activities for the last two weeks.

On initial examination in the emergency room he was conscious, had good verbal expression and understanding. His muscle strength was found 1-2/5 in both lower extremities. Deep tendon reflexes were found to be lacking and he did not have a pathological reflex. His sensation tests were also normal.

Biochemical laboratory analysis showed a serum potassium level of 1.9 mEq/L and urinary potassium level of 10 mEq/L. Electrocardiographic study showed prominent " U " waves with T wave depression indicating hypokalemia. He was treated with potassium chloride infusion and was discharged from the emergency unit after clinical and biochemical improvement.

As his complaints of weight loss, anxiousness, nervousness, excessive sweating and tremors were continued he referred to our out-patient clinics with a suspicion of hyperthyroidism by his local doctor. On examination his blood pressure was 120/60 mmHg and pulse rate was 114 per minute. The skin was warm and moist. The patient had a grade 1a diffusely enlarged thyroid gland with abnormal thyroid function tests of following levels; free triiodothyronine (f -T₃), 10.7 pmol/L (Normal ranges:3.4 -7.2); free thyroxine (f- T₄) 48.2 pmol/L (Normal ranges:9.5-26) and sensitive

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thyrotropin (s-TSH), 0.1 μ U / ml (Normal ranges : 0.2 - 5.1). His serum and urinary potassium levels were found to be low (3.1 mEq/L and 12 mEq/L respectively). He had normal plasma renin and aldosterone levels during normokalemic period. His thyroid antibody titers were mildly elevated. [Antimicrosomal antibody 137, antithyroglobulin antibody 79 IU/ml-Normal Ranges: 0-50]. 131 I thyroid uptake at 4 hours was 55% (Normal ranges : 15-25) ; at 24 hours 67 % (Normal ranges : 25 -50). On thyroid scanning; non-homogeneous activity was seen and thyroid echography showed diffuse enlargement. Propranolol, 20 mg orally every eight hours and propylthiouracil (PTU), 100 mg orally every six hours was initiated. He was also given a 60 mEq, daily oral potassium replacement therapy, which returned the serum levels to normal. His electroneuromyography was normal which was studied while he was normokalemic. Oral glucose tolerance test was performed in order to see the effect of carbohydrate load to the initiation of hypokalemic paralysis but no attack was noted during and shortly after the test.

His potassium replacement therapy was discontinued, in the first month of PTU, when he became euthyroid. His treatment with PTU was continued for 18 months. He experienced no hypokalemia during or after the therapy. He is being followed up for fourteen months after the discontinuation of therapy without any new symptoms and signs.

CASE 2

A 50 - year - old woman was admitted to the emergency room, complaining of inability to stand and walk. She woke up at 3:00 am and experienced a generalized muscle weakness. Her potassium level was found to be 1.7 mEq/L and she was replaced by potas-

sium chloride intravenously and the paresis gradually resolved. Her past medical history revealed arterial hypertension since 1989 and she was taking enalapril (angiotensin converting enzyme inhibitor) 10 mg per day for the last one year. She was on low sodium diet and no histories of licorice ingestion, vomiting, diarrhea, barium exposure and familial periodic paralysis. She was admitted to our clinic for the evaluation of the etiology of the hypertension.

On physical examination, her blood pressure was 160/110 mmHg, pulse was 96 beats/min and regular. She was obese with a body mass index of 34.6 kg/m². She had a grade II hypertensive retinopathy signs and grade I b diffuse thyroid enlargement. No abnormality could be found on other systemic examinations.

Laboratory evaluation, demonstrated electrolyte levels as followings: Serum sodium 143, 147 mEq/L; serum potassium 2.2, 2.7 mEq/L, urinary potassium 78 mEq/day, daily urinary output 3000 cc. Arterial blood gas analysis showed a metabolic alkalosis of pH 7.48. Her thyroid hormones, thyrotropin and thyroid auto-antibody levels were all in normal ranges.

Primary aldosteronism was suspected due to a low plasma renin activity of 0.2 ng/ml/h, (Normal ranges:0.2-2.8) and a high plasma aldosterone concentration of 47.2 ng/dl (Normal ranges:1-16) with supine position, so dynamic renin - aldosterone tests were performed and tests indicated an aldosterone secreting adenoma (Table 1). Abdominal computerized tomography evaluation revealed a nodular enlargement of right adrenal gland. Selective venous blood sampling from the both adrenal veins demonstrated a significant increase of aldosterone -to- cortisol ratio of the sample taken from the right with regard to the left one (3.29 for right adrenal and 1.22 for left adrenal). She was diagnosed as having primary aldosteronism due

Table 1. Basal and Dynamic Tests of Case 2

BASAL	PRA	Supine	0.4	(0.2 - 2.8)	ng / ml / h
		Upright	0.3	(1.5 - 5.7)	ng / ml / h
	ALDOSTERONE	Supine	47.2	(1 - 16)	ng / dl
		Upright	45.6	(4 - 31)	ng / dl
SALINE	ALDOSTERONE	Before	107.8	(1 - 16)	ng / dl
SUPPRESSION		After	61.6	(1 - 16)	ng / dl

PRA : Plasma Renin Activity

to a right adrenal adenoma. Up to the operation date, she was given orally, spironolactone 400 mg/day, bid. A right adrenalectomy was performed. Postoperatively her blood pressure did not raise over 130/85 mmHg and there was no need to an antihypertensive drug. Her serum potassium level was about 4 mEq/L without replacement. She did not experience a paralytic attack after the operation. She is being followed up for two years and has a good outpatient course.

DISCUSSION

Hypokalemic paralysis is characterized by episodic weakness, the presence of precipitating factors, and the tendency to resolve spontaneously (1). Morbidity and mortality associated with unrecognized disease include respiratory failure and death. The hypokalemic paralyzes represent a heterogeneous group of disorders with a final common pathway presenting as acute weakness and hypokalemia (2). Most cases are due to familial hypokalemic paralysis. Sporadic cases must be considered with the underlying etiologies such as periodic paralysis with different types of thyrotoxicosis [T_3 thyrotoxicosis (4,5), hyperthyroidism (6-10) or with a case of TSH oma (11)]; renal tubular acidosis (2,12-14); primary aldosteronism (2,15); barium poisoning (2,16); licorice ingestion (2,17,18) and gastrointestinal potassium losses (2). The approach to the patient with hypokalemic paralysis should be a careful search for the etiology and potassium replacement therapy. Further therapy depends on the etiology of the hypokalemia.

Thyrotoxic periodic paralysis (TPP) is the most common acquired form of periodic paralysis (6). It is common among thyrotoxic oriental men and the prevalence may be as high as 13 % (7); but has been reported only rarely (0.1-0.2 %) in other races (6,7,9). Serum potassium levels invariably decrease during a paralytic attack (6-10). It occurs more frequently in males, with a male - to - female ratio greater than 6:1. Attack of paralysis frequently begin in the early morning hours after a period of rest as in case 1. Factors known to provoke attacks include cold, trauma, infection, menses, alcohol, emotional disturbances, large meals of high sodium or carbohydrate content, strenuous exercise followed by rest, prolonged sleep and certain drugs such as insulin, epinephrine, corticosteroids and thiazides (6,8,9). During an attack, proximal

muscles are affected before distal ones and there is flaccid paresis with diminished or absent reflexes. Sensation is intact. Respiratory and bulbar musculature are almost always spared although severe attacks can cause respiratory and/or cardiac arrest. Attacks may occur daily or at monthly intervals and may last from hours to occasionally days. During an episode, serum potassium level usually significantly decreases (9).

The pathophysiology of TPP is uncertain. In TPP, the underlying susceptibility is made manifest by excess thyroid hormone. It has been proposed that the direct effect of thyroid hormone in stimulating membrane Na- K - ATPase activity, and / or the indirect effect of thyroid hormone in stimulating insulin hypersecretion may be involved in the intracellular potassium shift. Besides, thyroid hormone increases the sensitivity of beta-receptors, so catecholamine mediated cellular potassium uptake is raised (15). This mechanism would account for reports of epinephrine worsens paralytic attacks, while propranolol has protective effects (6).

Treatment of underlying hyperthyroidism must be the goal of TPP (6,8), for which radioactive iodine and antithyroid medications have both been used successfully. We treated our patient with propylthiouracil and no attacks occurred after the initiation of therapy. Since hypokalemia may persist until the euthyroidism is achieved we suggest potassium supplementation for three to four weeks in order to prevent a new hypokalemic attack. Although very rare, relapse was reported during the euthyroid state in some patients with TPP (9), our TPP patient did not experience a new attack once euthyroidism was established.

Primary aldosteronism is another cause of hypokalemic paralysis. The incidence of paralysis in Asian people, especially among Japanese, is 20.4 %, in patients with primary aldosteronism (15,19). Our second case experienced paralytic attack due to primary aldosteronism. Coexistence of hypertension and hypokalemia with an excessive urinary loss of potassium in a patient who was not taking diuretics should alert the physician for primary aldosteronism. Surgical treatment of primary aldosteronism is the definitive therapy of hypokalemic paralysis induced by Conn syndrome. So the serious events that hypertension and paralysis trigger, will be prevented. After surgery our patient (Case 2) was cured for both hypertension and hypokalemic paralysis.

In conclusion, patients with acute hypokalemic paralysis should be both replaced with potassium and be evaluated for the etiology simultaneously in the emergency rooms. The goal of the therapy will be, to normalize serum potassium levels and treatment of the underlying disease. Serious morbidity is rare but inc-

cludes arrhythmias, ventilatory failure and death. Hence, it is imperative for physicians to be knowledgeable about the causes of hypokalemic paralysis and consider them diagnostically, for lowering morbidity and mortality.

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JEJUNUM PERFORATION SECONDARY TO BILIARY STENT MIGRATION: A RARE COMPLICATION

Nusret Akyürek*

SUMMARY

Hepaticojejunostomy is the conventional surgical therapy as the choose of treatment in biliary stenotic cases. New surgical approaches have been developed in association with the interventional radiology and endoscopic surgery. Consequently, the conventional techniques have been less preferable. Biliary stents are used frequently in malign strictures and sometimes in benign strictures of biliary system. Placement of stent is performed during operation according to width of the common bile duct (CBD). Migration of the stent is one of s the major complication of this application. Mechanical ileus and sometimes perforation due to stent migration have also been mentioned. A 40-year female patient presented with jejunum perforation due to biliary stent migration was evaluated in this study.

Key words: Biliary stent, complication, jejunum perforation

Biliary stents are used frequently in malign strictures and sometimes in benign strictures of the biliary system. They are placed percutaneously; endoscopically or peroperatively. Complications related to biliary stents are; recurrent cholangitis, bacteremia, sepsis, and those related with migration, duodenal or colonic perforations, and bilioma. Perforation is seen very rare due to stent migration. These complications are seen in cases with stents of long duration. In this report a case with jejunum perforation secondary to polypropylene stent migration which had been placed after the revision of a biliary stricture following hepaticojejunostomy was presented.

CASE REPORT

A 40-year-old female patient was referred from a peripheral hospital to our hospital due to acute abdomen in 1987. She had undergone cholecystectomy for gallstones ten days before the referral. At laparotomy the CBD was seen to be totally injured; therefore a hepaticojejunostomy with a Roux en Y jejunal loop was performed.

The patient had a cholangitis picture in the postoperative 3rd month, and she was readmitted in the 18th month due to jaundice and pruritus. Abdominal ultrasonography showed dilatation of the intrahepatic biliary tract. Total bilirubin was 8.9 mg/dl (N: 0-1.4 mg/dl), direct bilirubin 3.4 mg/dl (N: 0-0.5 mg/dl), alkaline phosphatase 612 IU/l (N:64-300 IU/l), aspartate aminotransferase (AST) 120 U/l (N: 6-46 U/l), alanine aminotransferase (ALT) 133 U/l (N: 4-50 U/l), gamma-glutamyl transpeptidase (GGT) 413 U/l (N: 7-45 U/l). The patient was operated for stricture around hepaticojejunostomy. A 14 F polypropylene stent was placed between the CBD and jejunum.

The patient was discharged at the postoperative 10th day and she had cholangitis attacks almost each year. She was readmitted to our clinics, in the 4th postoperative year, for the complaints of abdominal pain, nausea, vomiting and fever. Physical examination revealed rebound tenderness and abdominal rigidity. Leukocyte count was 17.700/mm³. Total bilirubin was 1.7 mg/dl (N: 0-1.4 mg/dl), direct bilirubin 0.3 mg/dl (N: 0-0.5 mg/dl), alkaline phosphatase 215 IU/l (N:64-

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300 IU/l), AST 74 U/l (N: 6-46 U/l), ALT 51 U/l (N: 4-50 U/l), GGT 413 U/l (N: 7-45 U/l). Chest radiography showed free air under the right diaphragm. The patient was emergently operated for acute abdomen; and jejunal efferent loop was observed to be perforated.

The stent, placed four years ago, had migrated to jejunum, perforated a distal segment of jejunum and displaced to the abdominal cavity (Figure 1,2). On the stent exploration, when the stent had migrated was not determined, any strictural or stenotic pathology at the anastomotic side was not detected either. So, the anastomosis has been left intact. The stent was removed and the perforated jejunal segment was resected and end to end anastomosis applied. Segmental jejunal resection has been performed at the perforation side because wide perforative area including the proximal segment had formed a mass that causing mechanical ileus. No important problems were observed in the follow-up period of four years following this last procedure. Postoperative cholangitis has not been set in. So that we believe the preceding attacks occurred due to stent present in the CBD.

DISCUSSION

The most common cause of benign biliary strictures is iatrogenic injury to the biliary tract (3). The incidence is 0.1% in open cholecystectomy procedure. The higher rate observed in the early period of laparoscopic cholecystectomy has significantly decreased in recent years. Among the other causes of benign bi-

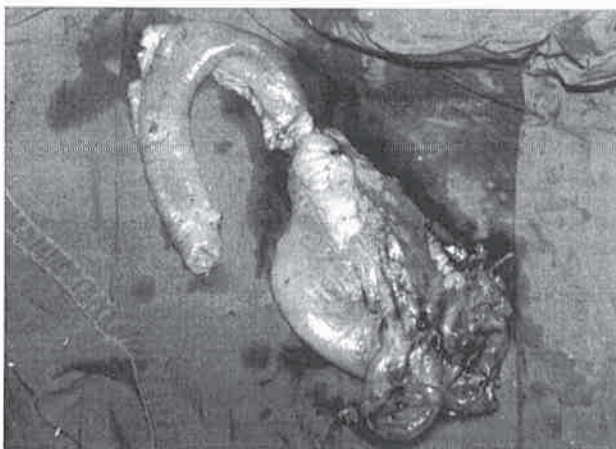


Figure 1. The stent migrated to the jejunum

liary strictures are the CBD exploration, bilioenteral anastomosis, partial liver resection and gastrectomy. In addition, chronic pancreatitis, recurrent sclerosing cholangitis and impacted stone can also cause benign biliary strictures.

In the etiology of malign biliary strictures, on the other hand, pancreatic cancer (54%), periportal metastasis (colon, breast, lung) (36%), and cancers of biliary tract and gallbladder (13%) play important roles. The success rate of surgical treatment for benign biliary strictures is 80%. Hepaticojejunostomy and Roux en Y reconstruction are usually used as repair techniques. However, there are complications such as biliointercentric anastomosis failure (13%) and recurrent cholangitis (5).

In our case, these two complications were seen after hepaticojejunostomy procedure carried out for the CBD injury. The cholangitis attacks recurring each 3 months were treated with antibiotics. The anastomotic narrowing developing in the 18th month was treated with the placement of polypropylene stent.

Biliary stent could be made of polypropylene, rubber, silastic or metallic (1,4,6). They are placed percutaneously, endoscopically or peroperatively. Among the early complications, bleeding, fever, sepsis and hemobilia, and among the late complications cholangitis, stent obstruction, perforation, ulceration or migration could be encountered (1,4,7).

In our clinics, the most common complication in the five biliary stent cases with a follow-up more than five years is recurrent cholangitis. Obstruction due to stent bending in two cases and stent migration in one case (presented here) are other faced complications.

Stent migration is among the most important complications. There have been recent reports on stent migration. Marsman et al. reported a case of necrotising fasciitis secondary to stent migration (8). Tan et al. reported another case of proximal transhepatic migration of an endoscopically placed biliary stent, which migrated out of the abscess in the abdominal wall (9). The other rarely seen complication due to stent migration might be sigmoid colon perforation (2), duodenum perforation and resulting widespread peritoneal bilioma (10), and distal duodenal obstruction (1), all of which have high morbidity and mortality.

To our knowledge, there has been no case of jejunal perforation secondary to stent migration. In our

opinion, perforation was caused by the inability of the stent to move in the efferent loop of hepaticojejunostomy and by chronic intestinal ulceration.

As a result, migration of the biliary stent, even to cause intestinal perforation, must be remembered among the late complications of biliary stricture repair procedures involving stent placement

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PERINEAL LIPOMA AND PENOSCROTAL TRANSPOSITION WITH ANAL AGENESIS: DOES THE MASS IMPEDE THE DESCENT OF THE BOWEL?*

Aydın Yağmurlu** • Hüseyin Dindar** • Meral Barlas**

SUMMARY

Transposition of the male external genitalia, full development of the scrotum in a position entirely anterior to the penis, is a rare abnormality.

The high association of perineal lipoma and accessory labioscrotal folds suggests its development as a consequence of intervening mesenchymal tissue (the developing lipoma). We therefore suggest its priority as the cause of anal agenesis

Here we are presenting a patient with anal atresia, hypospadias, penoscrotal transposition, bifid scrotum, urethral sinus and perineal lipoma.

Key Words: "anal atresia, penoscrotal transposition, perineal lipoma"

Transposition of the male external genitalia, full development of the scrotum in a position entirely anterior to the penis, is a rare abnormality (1-4). Here we are presenting a patient with anal atresia, hypospadias, penoscrotal transposition (PST), bifid scrotum, urethral sinus and perineal lipoma.

CASE REPORT

A newborn was seen 2 hours after birth due to strange looking genitalia and inability to pass meconium. Delivery was at 38 weeks; the APGAR scores were 7 and 9. The birth weight was 3600g. Anal agenesis, hypospadias and perineal mass (3x3x3cm), lay under the scrotum (Figure-1). Partial penoscrotal transposition, bifid scrotum, urethral sinus and bilateral retractile testes with well-developed scrotum were the other features of this maldeveloped newborn. Transverse loop colostomy was immediately performed. A posterosagittal anorectoplasty with a pullthrough and perineal lipoma excision followed by colostomy closure.(Figure-2) On renal ultrasound no further abnormality was found. The patient received a routine anal

dilatation program. Cystoscopy showed normal ureteral openings and bladder. Reconstruction of penoscrotal transposition was performed at 2 years of age (Figure-3).



Figure 1. Penoscrotal transposition, perineal lipoma and anal atresia

* Presented as a poster in the XVI.th Turkish National Pediatric Surgery Congress

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Figure 2. After excision of lipoma



Figure 3. After reconstruction of penoscrotal transposition

DISCUSSION

Transposition of the penis and scrotum in humans is rare and usually occurs in association with other genital and renal, skeletal, gastrointestinal and cardiovascular abnormalities (4-7). Cohen-Addad et al. In 1985 had classified penoscrotal transposition into complete and partial (incomplete) forms. In partial

PST, the two halves of the scrotum may be parapenile, or only one half of the scrotum may be displaced. This is the most common form of PST(8).

In our patient there was a bifid scrotum, the penis and urethral sinus were lying between and inferior of the two halves of the scrotum.

The testes, when present in scrotum, are often in parapenile position. We have observed bilaterally retractile testes in our patient that could be easily palpated by bimanual examination.

Hypospadias is a frequent concomitant of partial PST, and epispadias has also been described. Chordee is often present and renal abnormalities are common (2,4).

There was a subcoronal hypospadias in our patient. A renal US examination was performed and there had seem to be no renal abnormalities. Also we have performed a cystoscopy where bladder and the ureteral openings were normal.

Additionally we have observed a midline perineal mass, 3x3x3cm., lay between the scrotum and anus, with an attached 1x0.7cm. pigmented, rugated area of skin. The perineal mass was excised at the same time with posterosagittal anorectoplasty, the histopathological examination was concomitant with lipoma. The high association of perineal lipoma and accesory labioscrotal folds suggests us all these develop as a consequence of intervening mesenchymal tissue (the developing lipoma) disrupting the continuity of the caudally developing labioscrotal swelling. The coexistence of perineal lipoma and anal agenesis have brought in mind the opinion that the lipoma can be responsible of anal atresia.

Conclusion: The high association of perineal lipoma and accessory labioscrotal folds suggests its development as a consequence of intervening mesenchymal tissue (the developing lipoma). We therefore suggest its priority as the cause of anal agenesis.

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CAVITARY LUNG CANCER WITH A FUNGUS BALL-LIKE SHADOW

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SUMMARY

A 69-years old man with a smoking history of 50 pack-years had a thick walled cavity with an intracavity mass in the upper lobe of the left lung in the CT scan. There was no evidence of the malignancy in the preoperative bronchoscopy. On the basis of these findings, pulmonary aspergilloma was suspected and left upper lobectomy was performed. Microscopic examination revealed squamous cell carcinoma in the cavity wall. No evidence of fungal involvement was identified.

Key Word: Lung neoplasm-air crescent sign

Since, the second decade of the twentieth century, the incidence of lung cancer has risen in countries all around the world. Lung cancers are among the most common malignancies in the world and are the leading cause of cancer deaths in both men and women (1). Cigarette smoking is the most important cause of lung cancer in men and women (2). The classic radiographic presentation of carcinoma of the lung is a solitary pulmonary nodule which commonly appears as an irregular mass, on the other hand radiographic manifestations are numerous and varied (3) and these varieties may complicate the diagnosis.

CASE REPORT

A 69-year-old white man complained of cough with hemoptysis for 4 months. His medical history included adult onset diabetes mellitus. He had a smoking history of more than 50 pack-years. A cavitary lesion in the upper lobe of the left lung was found on a chest radiograph (Figure 1). The lesion showed the " air - crescent sign" characteristic of an intracavitary mycetoma. A CT scan of the chest demonstrated a

thick-walled cavity with an intracavitary mass in the upper left lobe. (Figure 2). Physical and laboratory findings were noncontributory. Preoperative bronchoscopy was normal. Preoperative diagnosis was as-



Figure 1. Chest film shows air - crescent sign of the left upper lobe

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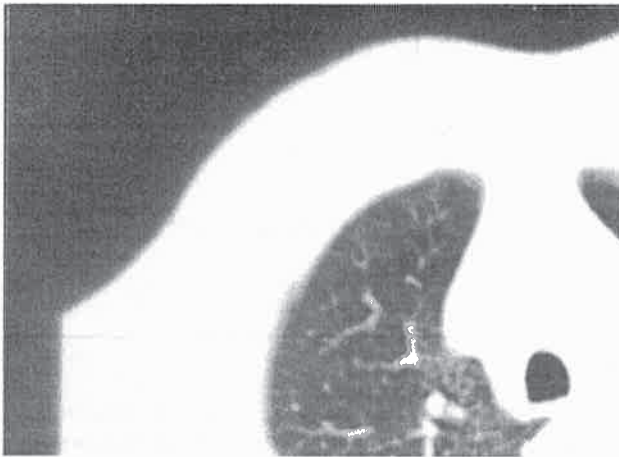


Figure 2. CT scan shows fungus ball-like shadow

pergilloma. The patient underwent a left upper lobectomy. Operation specimen was a left upper lobectomy and measured 15x8x5cm. A tumor mass of 6x5x5cm was observed without any relation with the bronchial tree. The central part of the tumor was necrotic and cystic with firm pale gray areas at the periphery. Histologically prominent necrosis and proliferation of atypical epithelial cells were observed. Groups of keratinized cells were recognized within the tumor islands. There was also gland-like structures due to necrosis but a clear cut glandular differentiation or mucin production was not observed. Neither fungal hypha nor spore was identified. The tumor was diagnosed as squamous cell carcinoma.

The patient had an uneventful postoperative course and discharged on the tenth postoperative day. In

the follow up of the patient, bilateral multiple metastatic lesions were observed in chest CT nine months after the operation and chemotherapy was administered.

COMMENT

The classic radiographic manifestation of carcinoma of the lung is a solitary pulmonary nodule which may appear either as a smooth-bordered lesion or as an irregular mass. In lung cancer, the radiographic presentation may also be in the form of an area of linear atelectasis, lobar atelectasis, distal abscess formation, hilar adenopathy, pleural effusion and elevation of the hemidiaphragm. In addition, unusual radiographic manifestations may be found in lung cancer as calcification, thin-walled cavitation, alveolar pattern, satellite nodules and air - crescent sign (3).

The classic radiographic presentation of fungus ball is meniscus or air- crescent sign and this sign is characteristic of intracavitary mycetoma. Pulmonary aspergilloma or fungus ball may be found in cases of cavitating carcinoma of lung (3,4,5) and rarely, air-crescent sign may be seen in these cases (3, 6). On the basis of these information and radiological findings, pulmonary aspergilloma was suspected in the present case. However, the histopathologic diagnosis was squamous cell carcinoma without aspergillus.

In conclusion, lung cancer may have unusual radiographic manifestations and may mimic aspergilloma as in the present case. This possibility should be remembered and frozen sections must be performed in every case with an elevated risk for lung cancer.

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INTRAPAROTID FACIAL NERVE NEUROFIBROMA

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Sibel Orhun** • Cafer Özdem*

SUMMARY

Intraparotid facial nerve neurofibromas are extremely rare with 4 previously reported cases. Intraparotid facial nerve schwannomas are more common with 53 reported cases until 1989. Two solitary neurofibromas of the main trunk and two cases of a facial nerve neurofibroma originating from the peripheral branches of the facial nerve were described in the literature. We present the fifth case of a solitary neurofibroma of the intraparotid facial nerve and third neurofibroma of the main trunk of the facial nerve.

Key words: Facial nerve, neurofibroma, parotid gland.

The most common of the neurogenic tumors, schwannomas and neurofibromas, both arise from proliferation of the neurilemmal cells of the myelinated nerves. Nearly all neurogenic tumors of the maxillofacial region derive from the sheaths of the trigeminal and facial nerve system.

Especially, intraparotid facial nerve neurofibromas are extremely rare. There are only four previously reported cases (1,2,3,4). Intraparotid facial nerve schwannomas, however, are considerably more common, with 53 reported cases.

Neurofibromas may be indicative of the hereditary neurofibromatosis syndrome, which may be associated with severe neurologic problems like glioma and spina bifida as well as the risk of malignant degeneration between 10 and 30 percent. When a neurofibroma is found, a careful search for other manifestations such as cafeau-lait spots and axillary freckling as well as a family history, should be explored to rule out the syndrome. The following case presents a neurofibroma originating from the main truncus of the facial nerve in the parotid gland.

CASE REPORT

A 32 year-old man had a 15-month history of a left parotid mass. The patient was otherwise asymptomatic. Ultrasonography (US) revealed a hypoechoic, smoothly limited 43x38x35 mm.sized mass lesion in the deep lobe of the left parotid gland. We do not use fine needle aspiration routinely in our clinic.

Left total parotidectomy was performed. During dissection, main trunk was searched where it should exit through the stylomastoid foramen. Dissection was difficult because the mass was hard in consistency and localized close to the stylomastoid foramen region. Dissection was continued in a retrograde fashion by following marginal mandibular branch. The mass was originating from the main trunk. During dissection it was not possible to separate the mass from the nerve and we cut the nerve and excised the mass. Primary anastomosis was performed. Postoperative evaluation revealed complete left peripheral facial nerve paralysis.

On macroscopic examination, the specimen was consisted of salivary gland and tumor tissue. The tumor was 5 cm. in its greatest diameter and on cut-sec-

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tion it was solid and graywhite colored, and the salivary gland tissue measured 4X2X1.5 cm. Microscopically, the tumor consisted of cells with hyperchromatic and wavy nuclei in a myxoid matrix. It was circumscribed but unencapsulated and contained hypercellular areas in which the tumor cells were arranged in short bundles. In some areas, the matrix was rich in collagen fibers (Figure 3). The microscopic evaluation of the salivary gland tissue revealed the normal structure.

The pathology report urged us to evaluate the patient for the probability of Neurofibromatosis. There was no family history and symptoms of Neurofibromatosis. Cranial CT showed no other tumor. There was no evidence of recurrence after a follow-up period of one year. Complete peripheral facial nerve paralysis was noted. Three positive (+++) denervation findings were recorded in electromyography (EMG) one year postoperatively.

DISCUSSION

The diagnosis of neurogenic tumors of the intraparotid facial nerve is rarely made preoperatively or intraoperatively. No characteristic symptom profile exists. We did not consider it as a neurogenic tumor intraoperatively. No symptoms were noted except a swelling of the left parotid region. Fine-needle aspiration biopsy is unsuccessful especially in neurogenic neoplasms. The fine-needle aspiration led to the correct diagnosis in only 3 of 12 cases in one study (5). The rarity of positive cytology may be secondary to the adhesive nature of cells in tumors of neurogenic origin (6). Facial movement must be searched by electrical stimulation of the mass during surgery in suspicious cases (4).

The issue of facial nerve function is central to the discussion of the treatment of benign neurogenic facial nerve neoplasms. Bretlau et al (1983), reviewed 53 cases of intraparotid facial nerve neurilemmomas and 20% of these patients presented with facial nerve dysfunction (6).

Disturbances of nerve function, US and CT can't be able to distinguish whether the lesion is benign or malignant. The retromaxillary/pterygomandibular region appeared to be the most likely site for malignant neurogenic tumors (5).

Generally schwannomas are encapsulated, whereas neurofibromas are unencapsulated as in our case. Cystic changes within the neoplasm are indicative of a schwannoma, as opposed to a neurofibroma. Schwannomas, commonly exhibit degenerative changes such as cyst formation, hemorrhage and local necrosis. Histological differentiation between a schwannoma and neurofibroma usually presents little difficulty, even though the precursor cell of both is the schwann cell (7). Neurofibromas are usually formed by spindle cells irregularly arranged in a loose collagenous matrix.

Schwannomas tend to displace nerves and therefore usually allow for nerve preservation procedures. Neurofibromas however incorporate nerves, separation of the nerve fibers from the tumor matrix is rarely possible and are generally resected en bloc with the involved nerve as in our case (8). En bloc resection with cable grafting is recommended by Conley when nerve fibers are tenuous and interspersed within the capsule of the tumor (9). Kavanaugh and Panje (1982) recommended complete tumor removal with resection of the involved nerve for decreasing the risk of recurrence. In our case, because of the tumor was unencapsulated and involved the nerve, the nerve was cut and en bloc resection of the tumor and primary anastomosis was performed (10).

In Krause's (1993) study, flow cytometric DNA ploidy analysis had been able to establish the behavior of the neoplasms correctly in all cases. Since it is absolutely necessary to know the behavior of the tumor pri-

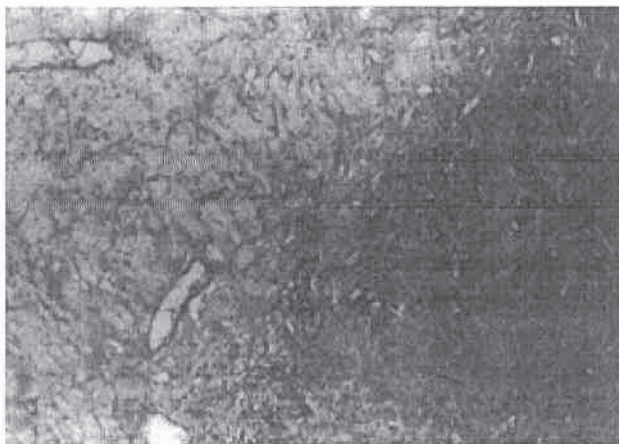


Fig 1: Hypercellular and hypocellular areas of the tumor. Interlacing bundles of elongated cells having wavy, dark-staining nuclei. (HEx200).

or to operation, flow cytometry may prove a valuable tool (5).

CONCLUSIONS

1. The diagnosis of intraparotid facial nerve neurofibroma tumors is rarely made even peroperatively.

2. Although it is possible to preserve the nerve especially when the tumor is originating from a peripheral branchy, the previously reported cases showed us that it is quite difficult to preserve the nerve when the tumor is big and ariginating from the main trunk.

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JOURNAL OF ANKARA MEDICAL SCHOOL

VOL 21 INDEX

SUBJECT INDEX

- Achalasia**
Achalasia of esophagus with multisystemic manifestations, 41
- Air emboli**
Pulmonary edema after multiple venous air emboli, 167
- Anesthetics**
Effects of the local anesthetic agents on the bladder and urethral muscles, 151
- Aneurysm**
Abdominal aortoiliac aneurysm with spontaneous left ilio-iliac arteriovenous fistula: a case report, 57
Aneurysm of the main pulmonary artery: surgical treatment by aneurysmorrhaphy and closure of the associated ventricular septal defect, atrial septal defect and patent ductus arteriosus, 101
- Bladder Cancer**
Blood Selenium Zinc and Copper levels in Patients with Bladder Cancer, 1
- CAPD**
Determinants of adequacy in pediatric capd patients and residual renal function, 189
- Cardiac thrombus**
Intracardiac thrombus associated with factor V (1691 G-A) mutation (A case report), 177
- Cardiomyopathy**
The effects of L-carnitine on left ventricular function and erythrocyte superoxide dismutase activity in patients with ischemic cardiomyopathy, 135
- Cerebrovascular accidents**
Cerebrovascular accidents and the role factor V mutation in children, 147
- Chorea**
Sydenham chorea: a review of 50 patients followed in Dr. Sami Ulus children's hospital between 1990-1997, 181
- Cranial bony defects**
A new method for reconstruction of cranial bony defects: technical notes with illustrative case, 113
- Deep vein thrombosis**
The incidence of postoperative deep vein thrombosis following abdominal surgery, 155
- Depression**
Increased serum arginase activity in depressed patients, 131
- Diabetes Mellitus**
The clinical and metabolic effects of fasting on 41 NIDDM patients during the ramadan, 11
- Diencephaly**
Paramedian diencephalic syndrome (Case report), 105
- Family planning**
Cross-Sectional Study: Use of Family Planning Methods and Evaluation of Effective Factors, 193
- Febrile Seizures**
Febrile convulsions: review of 284 patients and the evaluation of intermittent prophylaxis, 61
- First aid**
A study about the first aid knowledge of the parents having pre-school children, 203
- Follicular adenoma**
Differentiation of follicular adenomas and carcinomas by evaluating epithelial membrane antigen Leu-7 antigen and vimentin, 69
- HELLP syndrome**
Prone position improved arterial oxygenation in a patient with HELLP syndrome, 53
- Hematuria**
A method in evaluating urinary erythrocyte morphology: computer assisted light microscopy (calm), 73
- Hepatitis B**
The relation between Hepatitis B virus infection and primary liver malignancies, 37
- Hodgkin's disease**
Hodgkin's disease and autoimmune hematologic disorders, 173
- Hydatid cyst**
Extrapulmonary intrathoracic hydatid cysts
- Incontinence**
An alternative method to prosthetic sphincter in the treatment of incontinence: gracilis urethral myoplasty-A review article, 161

Intraabdominal Infections

The randomized comparison of cefaperozone-sulbactam with imipenem-cilastatin in the treatment of intraabdominal infections, 23

Leprosy

Psychiatric disorders in leprosy patients in Turkey, 141

Lipoma

Perineal lipoma and penoscrotal transposition with anal agenesis: does the mass impede the descent of the bowel?, 227

Lung cancer

Intracellular antioxidant defence in lung cancer, 125
Cavitary lung cancer with a fungus ball-like shadow, 231

Lymphedema

Cause and effect of treatment in lymphedema of the left lower extremity: a case report, 109

Malnutrition

Bulging of the fontanel during malnutrition treatment, 65

Microsurgery

The effect of etodolac on the microvascular patency rates, 81

Mitochondria

Mitochondrial alterations of the renal proximal tubule epithelium in rats exposed to smoke, 121

Mucocele

Mucocele of the appendix and colorectal neoplasms, 49

Neurofibroma

Intraparotid facial nerve neurofibroma, 233

Omeprazole

Omeprazole: calcitonin stimulation test in young and elderly subjects, 185

Otitis

Tympanoplasty, ventilation tubes and mastoidectomy in the treatment of adhesive otitis, 27

Perforation

Jejunum perforation secondary to biliary stent migration: a rare complication, 223

Paralysis

Hypokalemic Paralysis; Different Etiologies, Similar Clinical Presentations, 219

Photodynamic therapy

The potential application of photodynamic therapy in gynecologic disorders, 97

Pneumothorax

Deficiency of antioxidant defence in spontaneous pneumothorax, 85

Poliomyelitis

Post-poliomyelitis syndrome and its management, 89

Prostatic hyperplasia

A case of giant prostatic hyperplasia successfully managed with combined suprapubic and retropubic prostatectomy technique, 165

Prostatitis

Prostatitis and prostate specific antigen, 77

Psychiatric classification

A short history of psychiatric classification, 213

Pulmonary vascular tonus

The effects of neostigmine on pulmonary vascular tone, 17

Thrombolysis

Serial D-Dimer Concentrations and its Relation to Thrombolysis, 5

Ureteral triplication

A case report: ureteral triplication seen along with ipsilateral ureterocele, 117

Varicocele

Varicocele testiculopathy: a novel cause for treatment failure in hypogonadotropic hypogonadism, 171

VSD

Absent pulmonary valve syndrome with apical muscular VSD, 45

AUTHOR INDEX

- Akal, Murat, 125.
 Akalın, Hakkı, 101.
 Akar, Nejat, 147, 177.
 Akarsan, Yasemin, 105.
 Akay, Hadi, 231.
 Akçıl, Ethem, 135.
 Akkurt, Hüseyin, 231.
 Aksoy, Fehmi, 233.
 Akyürek, Nusret, 23, 223.
 Alkış, Neslihan, 53.
 Altuntaş, Buket, 41.
 Arasıl, Ertekin, 113.
 Aşık, İbrahim, 17, 53, 167.
 Aşkar, İbrahim, 81.
 Atakurt, Yıldır, 203.
 Atalay, Semra, 45, 101, 177.
 Atlı, Teslime, 185.
 Aydoğan, Filiz, 27.
 Aygüneş, Beyhan, 167.
 Bademci, Gülşah, 113.
 Bakkağolu, Sevcan A., 189.
 Balkanlı, Kunter, 33.
 Barlas, Meral, 109, 227.
 Başkal, Nilgün, 69, 219.
 Bayar, Sancar, 49.
 Berk, Çağlar, 113.
 Berksun, Oğuz, 141.
 Bilgin, Ömer Fazıl, 49.
 Bingöl, Ayşe, 105.
 Bruning III, Carl O., 171.
 Bulucu, Fatih, 73.
 Can, Belgin, 109, 121.
 Cangır, Ayten Kayı, 231.
 Cardenas, Diana D., 89.
 Chancellor, Michael B., 161.
 Coşar, Ahmet, 151.
 Çabuk, Feryal, 181.
 Çanakçı, Necati, 53.
 Çekiç, Ali, 233.
 Çelikkanat, Serdar, 27.
 Çorapçioğlu, Demet, 69.
 Dakak, Mehmet, 33.
 Dalyan, Meltem, 89.
 Dayanç, Murat, 77.
 Deda, Gülhis, 61, 147.
 Değer, Necmi, 5.
 Demircin, Metin, 57.
 Demirer, Seher, 155.
 Dere, Hüseyin, 27, 233.
 Dinçer, Çağlayan, 203.
 Dindar, Hüseyin, 227.
 Doğruer, Kağan, 165.
 Döşeyen, Zeki, 49.
 Ekici, Eyüp, 65.
 Ekim, Mesiha, 189.
 Ekinci, Cemil, 173.
 Elgün, Serenay, 131.
 Elhan, Atilla H., 189.
 Elverdi, Nezh, 49.
 Erdoğan, Murat Faik, 11, 185.
 Erdoğan, Gürbüz, 11, 185, 219.
 Erduran, Doğan, 77, 151.
 Erol, Çetin, 135.
 Ersel, Filiz, 5.
 Ersöz, Gülriz, 85.
 Ertuğ, A. Ergün, 185.
 Ertürk, Şebnem, 167.
 Farsak, Bora, 57.
 Fıçıcılar, Hakan, 85, 125.
 Genç, Onur, 33.
 Girgin, Nurten, 41.
 Gökalp, Adil, 151.
 Gökçora, İ. Haluk, 109, 173.
 Gözdaşoğlu, Sevgi, 109, 173.
 Güllü, Sevim, 69, 219.
 Gülnar, Sevgi Başkan, 65.
 Gültan, Serdar, 109.
 Güngör, Adem, 85.
 Güngör, Mete, 97.
 Gürer, Yavuz, 181.
 Gürkök, Sedat, 33.
 Gürlek, Adalet, 135.
 Güven, Alev, 61, 147.
 Güven, M. Cengiz, 121.
 Güvener, Murat, 57.
 Han, Serdan, 231.
 Harman, Mehmet, 141.
 İlgin, Şen Dağcı, 219.
 Işıkyay, Canan, 105.
 İmamoğlu, Ayten, 45, 177.
 İnce, Erdal, 41.
 Kabakuş, Nimet, 147.
 Kamel, Nuri, 11, 69.
 Kansu, Aydan, 41.
 Karabacak, Kadir, 117.
 Karadayı, Kürşat, 17.
 Karademir, Selmin, 181.
 Karagöl, Uğur, 61, 147.
 Karalezli, Giray, 117.
 Karayalçın, Selim, 41.

- Kemahlı, Sabri, 147.
 Kerek, Mustafa, 23.
 Keven, Kenan, 185.
 Kılınç, Cumhur, 1.
 Kilciler, Mete, 73, 77, 151.
 Kocatürk, Pelin A., 135.
 Koçak, Gülendamar, 45, 177.
 Koşar, Alim, 165.
 Kumbasar, S. Deniz, 5.
 Kumbasar, Hakan, 131.
 Kundakçı, Nihal, 141.
 Kurt, Ercan, 151.
 Kuterdem, Ercüment, 155.
 Küçük, Kadir Can, 23.
 Küçük, Babür, 81.
 Mutluer, Nermin, 105.
 Oğuz, Deniz, 181.
 Oral, Mehmet, 17.
 Oral, Dervis, 135.
 Orhun, Sibel, 233.
 Öcal, Gönül, 65.
 Öcal, Aylin, 105.
 Öcal, Burhan, 181.
 Öktenli, Çağatay, 73.
 Özbas, Serdar, 155.
 Özbek, M. Cem, 27.
 Özberrak, Haldun, 101.
 Özcan, K. Murat, 27.
 Özcan, Hasan, 155.
 Özcan, K. Murat, 233.
 Özdem, Cafer, 27, 233.
 Özgencil, Enver, 17.
 Öztürk, Teksel, 57.
 Öztürk, Ahmet, 165.
 Özuslu, B. Ali, 33.
 Peker, Ahmet Fuat, 1.
 Peker, A. Fuat, 77.
 Sabuncuoğlu, Bizden Tavil, 81.
 Sak, Serpil Dizbay, 69, 231.
 Sancaktar, Oktay, 5.
 Saran, Yüksel, 121.
 Saray, Aydın, 81.
 Sarıgül, Ali, 57.
 Sarper, Alpay, 33.
 Saygın, Birsan, 53.
 Semiz, Ender, 5.
 Serel, T. Ahmet, 165.
 Sevin, Kutlu, 81.
 Soykan, Atilla, 141, 213.
 Soykan, Çiğdem, 213.
 Sunguroğlu, Kadirhan, 1.
 Şahin, Günay, 11.
 Şen, Serdar, 231.
 Şenocak, Filiz, 181.
 Şimşek, Işıl, 203.
 Tahmaz, Lütfü, 77, 151.
 Taşoz, Refik, 101.
 Taştan, Hakkı, 121.
 Tekelioğlu, Meral, 109.
 Tezcan, Sevgi, 97.
 Tokyol, Çiğdem Erişgen, 37.
 Tonyukuk, Vedia, 69.
 Tosun, Zafer, 5.
 Tulunay, Melek, 17.
 Tutar, Ercan, 45.
 Tutar, H. Ercan, 101.
 Tutar, Eralp, 135.
 Tutar, Ercan, 177.
 Tümer, Necmiye, 189.
 Türkçapar, Ahmet Gökhan, 155.
 Ulukol, Betül, 65, 109, 173.
 Uysal, Ali Rıza, 11, 69.
 Uysal, Serap, 61, 147.
 Uysalel, Adnan, 101.
 Ünal, Necmettin, 17.
 Ünal, Emel, 173.
 Vural, Abdülğaffar, 73.
 Yağmurlu, Aydın, 227.
 Yalçın, Orhan, 77.
 Yalçınkaya, Selim, 5.
 Yalçınkaya, Fatoş, 189.
 Yardımcı, Serdar, 121.
 Yavuz, Gülsan, 173.
 Yavuzer, Sema, 85, 125.
 Yavuzer, Şinasi, 85, 125.
 Yeğın, Ayşegül, 53.
 Yılmaz, Mustafa, 57.
 Yılmaz, Sümer, 181.
 Yiğit, Aytaç, 105.
 Yörükoğlu, Dilek, 167.
 Yurdakul, Talat, 117, 161, 171.
 Yücesan, Canan, 105.

