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*Opinions Of Ankara University Students Related To Benefit From Health Counseling
Services Provided By The University Through*



*An Example Of Health Sector Reforms In Turkey: Hospital Decentralization (Health
Enterprises)*



Acute Otitis Media In Children



Venous Diseases



Congenital Anomalies Among Infants Of Diabetic Mothers



Perinatal Lethal Form Of Hypophosphatasia



*Primary Oligodendroglioma Of The Lateral Ventricle: Computed Tomography And
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Elastofibroma Dorsi: Magnetic Resonance Imaging Findings In Two Cases

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CONTENTS

MEDICAL SCIENCIES

- Opinions Of Ankara University Students Related To Benefit From Health Counseling Services Provided By The University Through
Nilgün Sarp, R. Ömer Önder, Afsun Ezel Esatoğlu, Ahmet M. Acuner1
- An Example Of Health Sector Reforms In Turkey: Hospital Decentralization (Health Enterprises)
Nilgün Sarp, A. Ezel Esatoğlu, Yasemin Akbulut9

REVIEW

- Acute Otitis Media In Children
Yavuz Köksal, İsmail Reislı19
- Venous Diseases
Murat Güvener, Mustafa Yılmaz, Ömer Faruk Doğan, Burak Emre Onuk, Rıza Doğan25

CASE REPORTS

- Congenital Anomalies Among Infants Of Diabetic Mothers
Begüm Atasay, Ayla Günlemez, Saadet Arsan31
- Perinatal Lethal Form Of Hypophosphatasia
Begüm Atasay, Ayla Günlemez, Sevim Ünal Kızılateş, Merih Berberoğlu, Saadet Arslan35
- Primary Oligodendroglioma Of The Lateral Ventricle: Computed Tomography And Magnetic Resonance Imaging Findings
Çetin Atasoy, A.Tuba Karagülle, İlhan Erden, Serdar Akyar39
- Elastofibroma Dorsı: Magnetic Resonance Imaging Findings In Two Cases
A. Tuba Karagülle, İlhan Erden, Ayşe Erden, Demet Karadağ45

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OPINIONS OF ANKARA UNIVERSITY STUDENTS RELATED TO BENEFIT FROM HEALTH COUNSELING SERVICES PROVIDED BY THE UNIVERSITY THROUGH

Nilgün Sarp*, R. Ömer Önder**, Afsun Ezel Esatoğlu***, Ahmet M. Acuner****

SUMMARY

This study has been conducted to determine if "Ankara University's students' are for or against the idea of being supported by health counseling services through internet by the University at 2001-2002 academic year. The methodology consisted of a questionnaire conducted on 1500 randomly selected students studying at Ankara University among a universe of 43216 undergraduates and alumni. 1472 questionnaires were evaluated to come to a final conclusion. The results suggest that among the study-participants 78.4% has access to internet where 76.7% is for and 10.2% were against installation of health counseling services via internet. The reasons why 10.2% were against were the facts that 65.1% thought such services were unnecessary, 21.5% had difficulty to access internet, 6.7% found the media insecure and 6.7% devoted other reasons. As a conclusion; we believe installation and provision of health services via internet at Ankara University will be beneficial.

Key Words: Health Counseling, University Students, Internet

ÖZET

Ankara Üniversitesi Öğrencilerinin, Üniversite Tarafından İnternet Üzerinden Verilebilecek Olan Sağlık Danışmanlığı Hizmetlerinden Yararlanmalarına İlişkin Görüşleri

Bu araştırma, Ankara Üniversitesi öğrencilerinin, üniversite tarafından internet üzerinden verilebilecek olan sağlık danışmanlığı hizmetlerinden yararlanmalarına ilişkin görüşlerini belirlemek amacıyla 2001-2002 eğitim-öğretim yılı yılında yapılmıştır. Araştırmada literatür bilgileri yanında, anket uygulaması yoluyla elde edilen veriler değerlendirilmiştir. Araştırmanın çalışma evrenini, Ankara Üniversitesi'nin fakülte, konservatuar, meslek yüksekokulu ve yüksekokullarında öğrenim görmekte olan 43216 ön lisans ve lisans öğrencisi oluşturmuş; bu evrenden 1500 öğrenci örneklem içerisine alınmış; anket uygulaması sonucunda uygun bulunan 1472 anket değerlendirmeye alınmış; veriler analiz edilip sonuçlara ulaşılmıştır. Araştırma grubunun %78.4'ü interneti kullanmaktadır. Buna göre %76.7'si üniversite (Mediko) tarafından sağlık danışmanlığı hizmetinin internet üzerinden verilmesini; %10.2'si verilmemesini istemekte olup; geriye kalan grubun ise bu konuya ilişkin fikri yoktur. Bu hizmetin verilmemesini isteyenlerin %65.1'i "hizmetin gereksiz olduğunu", %21.5'i "internete ulaşma zorluğu yaşadıklarını", %6.7'si "güvenli bulmadıklarını" belirtmişler, %6.7 si ise bunu diğer nedenlere bağlamışlardır. Bu sonuçlardan hareketle, Ankara Üniversitesi öğrencilerinin sağlık danışmanlığı hizmetlerini internet üzerinden verilmesine ihtiyaç duydukları söylenebilir.

Anahtar Kelimeler: Sağlık Danışmanlığı, Üniversite Öğrencileri, İnternet

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"Student's Personality Services" is another developing function of the education as well as teaching and administration function. The purpose of the student's personality services is to take measures to make sure that students benefit from the teaching-understanding process and to prevent the existing obstacles. (1)

"Student Personality Services" includes some activities like entrance, registration and admission services; psychological information and guidance services; accommodation and food services; finding jobs and supplying employment services; financial aid, scholarship and credits; and special programs. "Health Services" that take place within these activities includes preventive health services as well as health control and evaluation; protection of the mental health; immunization and vaccination; medical treatment for the outpatients; rehabilitation aid; health education; prevention and development of the environmental health; and to make research. (2)

In Turkey, according to Article 47 of Higher Education Law numbered 2547, all universities have to establish a health center or a government health institution in it for its student's health problems. These centers provide preventive health care. Preventive health care is very important for the early diagnosis and treatment. (3)

In Ankara University, the unit for the health problems of student is "Health, Culture, and Sport Department". The Department of Health, Culture, and Sports has been established as an institution with revolving fund in 1996 with the name of "Medico Social Center" and has been changed as the "Department of Health, Culture and Sport" in line with the Article 32 of "Decree on Administrative Organization of Higher Education" dated 1983 and numbered 124. Among its functions there is providing services to students for their health problems. The purpose of this Department is "to prevent physical and mental health of the students, to treat or have them treated when they are sick..." (www.ankara.edu.tr/rektorate/sksdb-15.03.2002)

Students have to show their student's card and health report card when they go to this Department for the use of the services. Unfortunately there is no facility to give them health counseling services through internet.

Scientific and technological developments, have brought the utilization of internet in provision of medical health services to the agenda. "Virtual" environment is of great importance in accessing the services provided by Students Health Center; in providing these services more productive; in reducing the limitation of time and space to minimum. In this regard, scientific opinions have been put forward to emphasize that provision of health services will be an appropriate option. (4)

This research has been carried out to have and determine the opinions of Ankara University Students on health consultancy services to be provided through internet.

MATERIAL AND METHOD

This research has been designated as a field study in terms of descriptive surveillance model. Literature information and data provided through survey implementation have been evaluated in this research. This research includes 43216 pre undergraduate/undergraduate students having education in the faculties, conservatoire, vocational schools, high schools of fall semester of 2001-2002. 1500 students have been selected through controlled/quoted sampling method; as a consequence of the implementation of survey prepared in line with the purpose of the research, 1472 survey that has been considered as appropriately filled have been selected for evaluation.

FINDINGS AND DISCUSSIONS

1. Socio-Demographic Characteristics of the Research Group

When the socio-demographic characteristics of the research group have been taken into account, 51.7 % is male, 33.4 % is with his family, 29.6 % is in dormitory, 25 % is in house with his friends, others are in house alone and with his relatives. Moreover, 10.3 % of this research group is working and 21.2 % of the group has no social

security source. Among the group having the social security, 36.4 %belongs to Government Employees Retirement Fund; 28.8 %belongs to

Social Insurance Organization, 10.5 %belongs to Social Insurance Organization for Self Employees and 0.7 %has Green Card.

Table-1. Distribution of the Research Group According to Socio-Demographic Characteristics.

CHARACTERISTICS	NUMBER	%
Sex		
Female	761	51.7
Male	711	48.3
Accommodation Places		
With his family	491	33.4
In house –Alone	89	6
In house – together With friends	368	25
With his relatives	69	4.7
At the dormitory	436	29.6
Others	19	1.3
Working Situation		
Working	151	10.3
Not working	1321	89.7
Social Security sources		
Not covered by Social security	312	21.2
Having social security due to working	78	5.3
Having social security due to his/her family	1060	72
Others	22	1.5
Distribution of people having social security according to institutions.		
Social Insurance Org.	424	28.8
Government Employees Retirement Fund	535	36.4
Social Insurance Organization for Self Employees	155	10.5
Green Cards	11	0.7
Others	347	23.6
TOTAL	1472	100

2. Places and Frequency of Counseling about Health Problems of the Research Group

Table-2. Distribution of Research Group According to Places Where the Research Group Consults and Frequencies

PLACES USED AT THE LEVEL OF CONSULTING	VERY MUCH		OCCASIONALLY		NEVER		PRIORITY	TOTAL	
	NUMBER	%	NUMBER	%	NUMBER	%		NUMBER	%
	Official Health Inst.	1001	68	289	19.6	182		12.4	1
From the Family Members	337	22.9	552	37.5	583	39.6	2	1472	100
Private Health Inst.	185	12.6	684	46.4	603	41	3	1472	100
Friends	99	6.7	538	36.6	835	56.7	4	1472	100
Mass Communication Tools	72	4.9	357	24.2	1043	70.9	5	1472	100
Internet Health Sites	42	2.9	228	15.4	1202	81.7	6	1472	100
Traditional Applications	18	1.2	184	12.5	1270	86.3	7	1472	100
Health Consultation Telephone Lines	20	1.4	102	6.9	1350	91.7	8	1472	100

When the places where the research group consult for health problems and the frequencies have been considered, according to the priorities of research group, 87.6 %apply Official Health Institutions (77.6 %"very much"); 60.4 %apply family members (62.1 %"occasionally"); 59 %apply Private Health Institutions (78.7 %"occasionally"); 43.3 %apply friends (84.5 %"occasionally"); others apply Mass Communication Tools (29.1 %), health web sites (1.83 %); traditional applications (13.7 %) and telephone lines giving health consultancy services (8.3 %).

Official Health Institutions rank in the beginning of the order for consultation because most of the students have social security. It has been considered interesting that some members of research group apply mass communication tools, Internet health sites and telephone lines.

This situation has been perceived the necessity for consultation services in this respect.

3. Degree of Utilization of the Research Group of the Health Services Provided By Health, Culture and Sport Department.

As it has been seen from the Degree of Utilization of the Research Group of the Health Services Provided By Health, Culture and Sport Department, 66.5%of the research group have not benefited from while the 33.5%have benefited from the services. 52.1%of the people benefit from the services are male.

Health, Culture and Sport Department of the Ankara University is open to all students that require a help. Degree of utilization is low, because, it serves to a young generation and young generation is more healthier than the older generation.

Table-3. Distribution of Degree of Utilization of the Research Group of the Health Services Provided By Health, Culture and Sport Department (HCSD) According to Sex

DEGREE OF UTILIZATION OF THE HEALTH SERVICES OF HCSD	SEX	NUMBER	%	TOTAL	
				NUMBER	%
People benefit from	Male	257	52.1	493	33.5
	Female	236	47.9		
People do not benefit from	Male	504	51.5	979	66.5
	Female	475	48.5		
TOTAL COVERAGE				1472	100

4. Utilization Degree of the Research Group from Internet

78.4% of the research group have benefited from the internet. 53.8% of them who have benefited from the internet are male. Generally, in the research group, 90.5% of the male population has benefited from the internet while the percentage of the females is 87.9.

In 1970, internet was planned for the use of "net of the networks" in the USA Defense Ministry. After then protocol agreements had been made in order to send information from one point to the other as a package program. Nowadays, with the increasing usage of the personal purposes, internet usage is expanded widely. (5)

Major part of the research group has benefited from the internet. This situation can be explained by the augmentation of the computer facility at the home, schools and internet cafes as well as the increasing interest in computers and internet.

5. Demand of the Research Group on Health Consultancy Services Provided by the University Through Internet

Health counseling is a general concept that aim to response of the people who are health professionals, people that have health problems and people who want to have some information about health topics. There are a lot of ways to give health counseling services. One of them is trough internet. It is also called "virtual hospital". It is used to get information through web sides or

Table-4. Distribution of the Utilization Degree of the Research Group from Internet According to Sex

UTILIZATION DEGREE FROM INTERNET	SEX				TOTAL	
	MALE		FEMALE			
	NUMBER	%	NUMBER	%	NUMBER	%
People benefit from	621	90.5	533	87.9	1154	78.4
People do not benefit from	140	9.5	178	12.1	318	21.6
TOTAL	761	100	711	100	1472	100

Table-5. Demand of the Research Group on Health Consultancy Services Provided Through Internet

HEALTH CONSULTANCY SERVICES PROVIDED THROUGH INTERNET	NUMBER	%
People demand	1130	76.8
People do not demand	250	10.2
No comment	192	13
TOTAL	1472	100

by e-mail. Both of them can be used at the same time or separately. It can be gone trough by titles and all titles can have their own e-mail addresses. This kind of web sites' information are based on the information from medical books or medical articles. Information can be obtained by e-mail during all day or only working time (4).

76.8 %of the research group demand to benefit from health consultancy services

provided by the university through the internet, 10.2 %do not demand and 13%stated no comment. This situation reflects the need for the health consultancy services provided through the internet. As it can be understood from Table 4, 78.4 %of the students have ability to use the internet. All of the students demanding health consultation through internet are the ones that have the opportunity to use the internet. Both values are similar to each other.

Table-6. Demand of the Research Group on Types of Health Consultancy Services Provided Through Internet

KINDS OF HEALTH CONSULTANCY SERVICES	NUMBER	%	TOTAL NUMBER	PRIORITY
Psychological consultancy	916	62.2	1472	1
General Health Information	898	61	1472	2
Guidance	730	49.6	1472	3
Sexual Problems	669	45.4	1472	4
Information on Alternative Medicine	618	42	1472	5
Polyclinic Appointment	606	41.2	1472	6
Internal Diseases	555	37.7	1472	7
Women Diseases	462	31.4	1472	8
Family Planning Methods	443	30.1	1472	9

Demands regarding the health consultancy services provided through internet are given in Table 6. According to the priority order of the research group, 62.2% requests to get information on psychological consultancy, 61% general health, 49.6 % guidance services, 45.4 % sexual problems, 42 % alternative medicine, 41.2 % polyclinic appointment, 37.7 % internal diseases, 31.4 % women diseases and 30.1 % family planning methods.

The research group has given the priority to "psychological consultancy", "general health information" and "guidance services" in their demand for health consultancy services provided through internet. This situation can be considered as the reflection that the problems mostly disturbing their mind and affecting their academic achievements negatively are these. At the same time, the mentioned situation can be considered as a reflection of the demand for solving the problems in this area in a fast and easy way. Therefore, results of the researches on student's problems support the above mentioned opinions (6, 7, 8). The other health consultancy types ranking in lower lines have been found convenient since they reflect the requirements of the research group and their intention to access this requirements through internet.

RESULTS AND RECOMMENDATIONS

This research is a field study with descriptive feature in surveillance model and includes the statistical evaluation of the 1472 survey applied to students chosen by controlled quota sampling method to determine their opinion on utilizing of health consultancy services provided by the Ankara University through internet.

Results of the research is given below:

- Major of the research group lives in house with his/her family or friends or lives in dormitories, 51.7% of them are male and 89.7 % do not have a job. 77.3 % of them have the social security, mainly Government Employees Retirement Fund, Social Insurance Organization and Social Insurance Organization for Self Employees.
- Research group firstly apply to state health institutions, family members and private health institutions; means of mass communication, web sites on health and telephone lines providing services on health are also included in their application sources.
- 33.5% of the research group have been benefited from the Health Unit of the Department of Health, Culture of Ankara University that students could apply in their solution seeking.
- 78 % of the research group stated that they are using internet and 76.8% stated their intention to benefit health consultancy given through the internet.
- Priority order of the demands regarding the health consultation through internet are psychological consultation services, general health information, guidance, information on sexual problem, alternative medicine, polyclinic appointment, information on internal diseases and family planning methods.

Necessary infrastructure studies and organization should be carried out to provide health consultancy services to Ankara University students through internet.

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AN EXAMPLE OF HEALTH SECTOR REFORMS IN TURKEY: HOSPITAL DECENTRALIZATION (HEALTH ENTERPRISES)

Nilgün Sarp*, Afsun Ezel Esatoğlu**, Yasemin Akbulut***

SUMMARY

This study includes hospital decentralization reform in Turkey. The component of this reform aims at improving effectiveness, accessibility and quality of hospital services. The autonomization of hospitals will be achieved by giving the public hospitals an autonomous status and turn them into health enterprises (HE). HE are hospitals, autonomous both administratively and financially, which serve with a management based on principles of efficiency that are able to afford their costs with their own revenues and also able to compete. Legal arrangements related to HE were put into effect in 1995 and Turkish Higher Specialization Hospital was given the status of a HE for the first time. In this study it has been aimed to make an analysis concerned with the effect of the hospital's status change on its performance. For this reason, some top bureaucrats and hospital administrators have been interviewed; data related to years 1990-1999 have been collected; related literature has been reviewed. At the end of ten year trial, it has been understood that the hospital has not achieved the suggested organizational and financial structure. It has still had share in the government annual budget for some expenditures; hospital has had many application problems. However, the number of contract staff and the amount of hospital income have increased. Apart from having insufficient laws, it has been thought that these problems may have occurred because hospital has been well prepared physically and socially and also due to the in-service directions not well-formed.

Key Words: Health Management, Health Reforms, Performance Indicators

ÖZET

Türkiye'de Sağlık Sektöründeki Reformlara Bir Örnek: Hastane Desantralizasyonu (Sağlık İşletmeleri)

Bu çalışma, Türkiye'de sağlık reformları çerçevesinde yer alan hastanelerin özerkleştirilmesini ele almaktadır. Reformun bu parçası hastane hizmetlerinin kalitesini, kullanılabilirliğini ve etkililiğini artırmayı amaçlamaktadır. Hastanelerin özerkliği, kamu hastanelerinin özerk statüdeki sağlık işletmelerine dönüştürülmesi ile sağlanacaktır. Sağlık işletmelerine dönüştürülen hastanelerin yönetim prensiplerini etkili olarak uygulayarak, gelirleri ile kendi kendilerine yetebilmeleri, yönetsel ve finansal açıdan özerk olmaları planlanmıştır. Türkiye'de Türkiye Yüksek İhtisas Hastanesi, 1995 yılında sağlık işletmesi statüsüne dönüştürülen ilk ve tek hastanedir. Çalışmada bu hastanenin statüsündeki değişikliğin, hastanenin performansına olan etkisini analiz etmek amaçlanmıştır. Araştırmada bazı önemli bürokrat ve hastane yöneticileri ile görüşülmüş, hastanenin 1990 ve 1999 yılları arasındaki verileri ve konuyla ilgili literatür incelenmiştir. Bu on yıllık dönemin incelenmesi sonunda hastanenin finansal ve örgütsel yapısında olumlu bir değişiklik yaratılmadığı saptanmıştır. Bazı harcamalar hala devlet bütçesi tarafından karşılanmakta ve yoğun olarak yeni sistem ile ilgili uygulama problemi yaşanmaktadır. Personel sayısında artış görülmesine rağmen, hastane gelirlerinde düşüş saptanmıştır. Hukuki yapının tam olarak oturtulamaması, hastane içerisindeki örgüt yapısının net olarak belirlenmemesi de, sorunlara neden olan diğer etmenlerdir.

Anahtar Kelimeler: Sağlık Yönetimi, Sağlık Reformları, Performans Göstergeleri

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Health right is guaranteed by the constitutional law in Turkey. The Ministry of Health of Turkey, which was established in 1920, was among the first Ministries of Health in the world giving priority to the prevention of health problems, rather than the treatment of diseases. Health services in Turkey are provided mainly by the Ministry of Health, Social Insurance Organization (SSK), Universities, The Ministry of Defence, and Private Sector. Table 1 presents provision and financing health services in Turkey.

Background

The nature of health problems, people's demand from the health system and their preferences are changing in Turkey as well as in other countries. The scope and cost of curative services are increasing; the technology is advancing; countries are trying to decrease the cost of curative services by protecting and improving the health of their citizens and are also exploring a system in which they can use their resources more effectively. On the other hand, health indicators in Turkey, especially in the

regions with a slow socio-economic development, are not satisfactory. The most common causes of mortality and morbidity are preventable and controllable. The current health care system also experiences equity problems. There are no rational human resources plans based on epidemiological and demographic conditions and the utilisation of services. The problems mentioned above have forced the government, while applying the health services, to get involved in a new structure and change. Also, the demographic trend in Turkey implies the need for change in service provision (1).

The liberalisation trend, which took place in the 1980's all around the world was also effective in the health sector; many countries in the leadership of the reforms in English Health Sector began to perform some reforms in their health services (2,3). The main target of these reforms is the establishment of a market which motivates productivity while trying to set up equity, and the formation of the sides which compete with one another during the supply process by separating the service and the finance from each other.

Table 1. Provision and financing of health service in Turkey

Provision of Services	Sources of Funds
Public -Ministry of Health -Social Insurance Organization -University Hospitals -Ministry of Defence -Other Ministries -State Economic Enterprises -Municipalities	State Budget Through -Ministry of Health -Higher Training Council-Universities -Ministry of Defence -Other Public Sector Sources Compulsory Insurance -Social Insurance Organization (SSK) -Government Employees Retirement Fund (Emekli Sandığı) -The Social Insurance Agency of Merchants Artisans and Self-Employed (Bağkur)
Private -Private Hospitals -Private Physicians -Private Pharmacist -Private Laboratories -Philanthropic	Private Insurance Funds Out of pockets Payments (User Charges)

Source: (1) Ministry of Health, Health Sector Reforms in Turkey 1997a. Health Project General Coordination Unit, p:15.

While the finance is being controlled centrally in the current mechanism, competition is being achieved among the people who provide the service. The reform acts in Turkish Health Sector, parallel to the ones in the world, were started in 1980's; and since then there have been some very important improvements in the primary health services.

The main points that are planned to be achieved in Turkey are as follows; Health Finance Institution (everyone living in the country is intended to be included in health insurance); autonomy of the hospitals (converting them into health institutions); increasing the accessibility of the system by transferring to family physician system in providing the first step health services; management system reform (decentralization and management training); the improvement of health information systems (4). There was a great need for some changes in the health law to put these reforms into effect and so in 1987 "The Basic Law of Health Services" act was made (5). With this new law, except for the hospitals belonging to the Ministry of Defence, the public hospitals were decided to change into health institutions and the doctors working at government hospitals were given the right to examine patients, that is to say, to work for themselves after work. In 1995, the Regulation on Working Methods and Principles for the Health Enterprises of Public Institutions and Organizations was put in effect depending on this law (6). According to the Regulation, the health enterprises are the establishments that provide health services, have public legal status, are able to meet the outcomes with their incomes, and are administratively and financially autonomous. The concept of autonomy explains that the hospitals are away from the control of the central authority so that they are able to make their own decisions to form their own administrative structure, to employ the necessary staff, to define the qualification, quantity wages, and employment conditions of personnel as well as to procure and use their own finance.

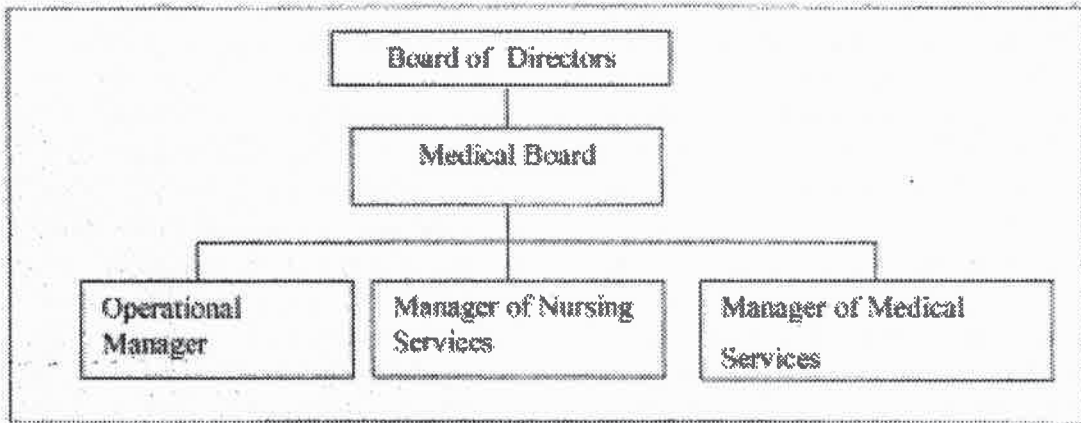
In a research that was carried out by the Ministry of Health on Evaluation of Health

Reform Activities in 1996, it was found that the health insurance was the most important subject pointed out by general public (70 %) during the health reform activities. Beside that the decentralization of hospitals took the 4th place (42 %) (7). The increase of hospital costs caused to draw attention and reaction of many groups in the community. Furthermore, it has directed the hospital management to deal with more closely the problems about cost, productivity and quality, in other words, with the problem to develop the organizational performance (8). This tendency forms the starting point for the need of decentralization of hospitals in health reforms. Legal arrangements related to health enterprises were put into effect in 1995 and Turkish Higher Specialization Hospital (THSH) was given the status of a health enterprise for the first time. The newly formed organizational structure of health enterprise is quite different from the organizational structure of present state hospitals. The general organizational model for Health Enterprises (THSH) is shown in Table 2.

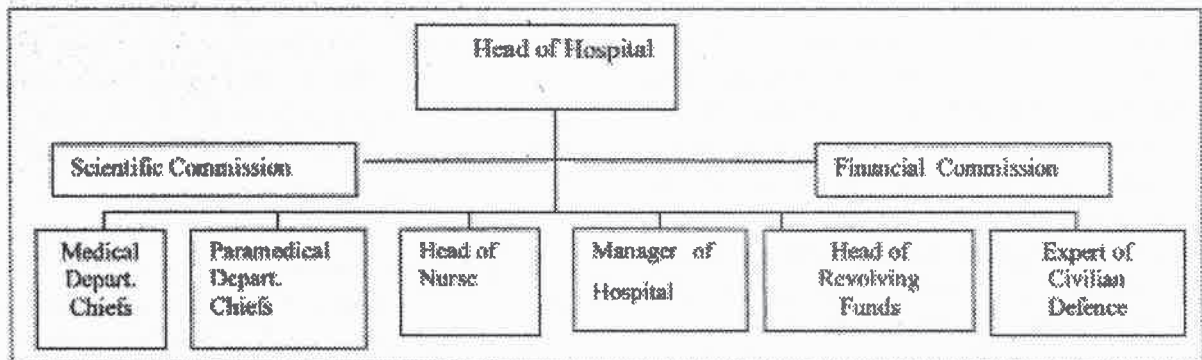
As seen in Table 2, the administrative bodies of THSH health enterprise consist of the Board of Directors, the Medical Board, the Operational Manager and the Manager of Nursing Services. The Board of Directors is the highest decision-making unit. This Board consists of Head of Hospital, Operational Manager, a member selected by the members of the Medical Board, a representative selected by the doctors who are not Medical Board members and a representative selected by other staff. The members are selected for two years (4). The general organizational model for public hospitals is shown in Table 3.

Objective of the Study

The objective of the study is to analyse the outcomes of the decentralization reform of THSH by comparing with 9 specialized hospitals in Ankara based on a number of indicators. The indicators are; average length of stay, bed occupancy rate, number of out-patients, crude death rate, number of in-patients, number of

Table 2. Organizational model for health enterprises (Turkish Higher Specialization Hospital)

Source: (9) Ministry of Health, Special Report of Health Enterprises, 2000b, p:10.

Table 3. Organizational model for public hospitals in Turkey

Source: (10) Akar, Ç, Özalp H., The Management of Health Services, 1998, p:135

physician, number of surgical operations per specialist, unemployed period of bed, speed of discharge from bed, revolving funds.

These indicators are important for the effectiveness and efficiency of the hospitals (8). In this study, data were collected through interview with the top level bureaucrats and hospital administrators of ministry of health and the specialised hospitals and analysis of performance indicators of hospitals between 1990-1999.

Results

Average length of stay is the average of total number of the days spent by the hospitalised patients. Average length of stay has a

characteristic to be an indicator for both quality and productivity. Yet the average of the length of stay decreased almost 2 days between 1995 and 1999, whereas it increased significantly in specialised hospitals (9 days in 1995 and 15.7 days in 1999, Table 4). The average of length of stay is 5.7 in 1995 (11) and 5.4 in 1999 (12) in general in Turkey.

Bed occupancy rate is one of the indicators that are used to find out that how profitably the beds are used which are the most important cost element. As seen in Table 4, even though the bed occupancy rate is higher at THSH than the other specialised hospitals, there is almost no increase in the bed occupancy rate after the

Table 4. Average length of stay and bed occupancy rate according to years of THSH and other training hospitals

	Average Length of Stay	Average of Training Hospitals *	Bed Occupancy Rate (%)	Average of Training Hospitals **
1990	13	10.2	84.3	66.4
1991	12	11.1	80.4	67.3
1992	11.2	15.3	84.3	72.8
1993	11	10.1	83.4	71.3
1994	11.7	9.3	84.6	71.7
1995	9.4	9	84.4	71.5
1996	8.6	9.2	86.5	72.2
1997	8.6	10.0	84.9	73.7
1998	8.5	16.8	82.9	79.3
1999	7.2	15.7	85.4	76.4

* Average Length of Stay in 9 Training Hospitals of Ministry of Health in Ankara

** Average Bed Occupancy Rate in 9 Training Hospitals of Ministry of Health in Ankara

decentralization of THSH (only 1% between 1995-1999), compare to these of specialised hospitals in the same years (5%). Bed occupancy rate was 58 % in 1995 (11) and 60% in 1999 (12) in general in Turkey.

The out-patient rate per physician is an important indicator that is used for evaluation of physician performance. While the number of out-patient rate per physician at specialised hospital is 770, it is 353 in THSH being almost less than half of specialised hospitals. As Table 5 indicates number of out patient rate per physicians decreased in both types of hospitals at similar rates between those years. Out-patient rate per physician was in general 2750 in Turkey in 1999

(12).

Crude death rate is another important indicator that is used for evaluation of the quality of hospital services. It shows the curability of hospitals. Although the crude death rates are higher in THSH, the presence of rehabilitation and obstructive hospitals among specialised hospitals contribute the low rate of crude death rate (3,5 in 1995 and 3,4 in 1999 in THSH and 2,9 in 1995 and 2,9 in 1999 in specialised hospitals)

Number of surgical operations per specialist per years is one of the variations to be used for evaluation of physician performance. There were 26,840 specialists in 1999 in Turkey. Average

Table 5. Out-patient rates per physician according to years of THSH and other training hospitals

	Number of Out-patients	Number of Physicians	Rate	Number of Out-patients	Number of Physicians	Rate*
1990	68,667	386	177.89	1,696,680	1,889	898.19
1991	62,061	197	315.03	1,668,730	1,937	861.50
1992	70,208	203	345.85	1,641,232	2,212	741.97
1993	72,770	217	335.35	1,841,482	2,369	777.32
1994	71,919	238	302.18	2,019,621	2,603	775.88
1995	105,174	238	441.91	2,757,607	3,074	897.07
1996	110,595	340	460.81	2,545,778	2,649	961.30
1997	109,739	242	453.46	2,536,871	2,755	920.82
1998	96,397	242	398.33	2,161,487	2,858	756.29
1999	92,709	262	353.85	2,222,477	2,886	770.08

* Average Out-Patient Rates Per Physician in 9 Training Hospitals of Ministry of Health in Ankara

Table 6. Crude death rates of THSH and other training hospitals

Years	Crude Death Rates (%)	Crude Death Rates (%) *
1995	3.5	2.9
1996	3.5	3.7
1997	3.4	2.7
1998	3.3	3.3
1999	3.4	2.9

* Average Crude Death Rate in 9 Training Hospitals of Ministry of Health in Ankara

number of surgical operation was 56 (12). The number of surgical operations at THSH are indicated in Table 7. Figures between 1995 (4722) and 1999 (4596) indicate no difference at all.

Number of in-patients per physician is one of the important indicators to be used for evaluation of physician performance. In-patient admission rate per physician is 124 in general in Turkey (12). It is higher in THSH compared to specialised hospitals (51.6 in 1995 and 50.2 in 1999 in

THSH and 37.4 in 1995 and 52.3 in 1999 in specialised hospitals) (Table 8).

Unemployed period for bed (day) is a performance indicator which shows the average number of days that a bed is unemployed. Unemployed period for bed (day) was 4.2 in 1999 in general in Turkey (12). As Table 9 indicates, the difference between THSH and specialised hospitals (1.7 in 1995 and 1.2 in 1999 in THSH and 3.6 in 1995 and 4.5 in 1999

Table 7. Number of surgical operations per specialist of THSH

	Number of Surgical Operations	Number of Specialist Physicians	Rate
1995	4,722	94	50.2
1996	4,986	101	49.3
1997	4,251	98	43.3
1998	4,407	97	45.4
1999	4,596	108	42.5

Table 8. Number of in-patients per physician of THSH and other training hospitals

	Number of In-patients	Number of Physician	Rate	Number of In-patients	Number of Physician	Rate *
1990	9,161	386	23.7	118,673	1,889	62.8
1991	9,423	197	47.8	105,368	1,937	54.3
1992	10,702	203	49.8	116,989	2,212	52.8
1993	10,468	217	48.2	111,200	2,369	46.93
1994	9,563	238	40.1	119,052	2,603	45.7
1995	12,292	238	51.6	114,973	3,074	37.4
1996	13,461	240	56.0	118,529	2,649	44.7
1997	13,257	242	54.7	151,089	2,755	48.4
1998	12,871	242	53.1	133,483	2,858	46.7
1999	13,161	262	50.2	133,566	2,886	52.3

* Average Number of In-patients Per Physician in 9 Training Hospitals of Ministry of Health in Ankara

Table 9. Unemployed period for bed (day) and speed of discharge from bed (patient) in years of THSH and other training hospitals

	Unemployed Period for Bed (Day)	Average of Training Hospitals *	Speed of Discharge From Bed (Patient) %	Average of Training Hospitals **
1990	2.4	5.1	23.5	23.7
1991	2.9	5.4	24.3	21.9
1992	2.9	5.7	27.3	17.3
1993	2.2	4.1	27.5	25.7
1994	2.1	3.7	26.2	27.8
1995	1.7	3.6	33	28.9
1996	1.6	3.5	35.8	28.7
1997	1.5	3.1	35.8	37.7
1998	1.8	3.9	35.5	31.5
1999	1.2	4.5	43.0	31.9

* Average Unemployed Period for Bed (Day) in 9 Training Hospitals of Ministry of Health in Ankara

**Average Speed of Discharge From Bed (Patient) in 9 Training Hospitals of Ministry of Health in Ankara

in specialised hospitals). It is higher in specialised hospitals compared to THSH.

Speed of discharge from bed (patient); It is higher in THSH (33%in 1995 and 43%in 1999) compared to specialised hospitals (28,9 %in 1995 and 31,9 %in 1999). Speed of discharge from bed (patient) was 35.1 in 1999 in general in Turkey (12).

Revolving funds income and expenditure; as Table 10 indicates income/expenditure rates

were 236%in 1992, it decreased 104%in 1999. That means revolving funds were not increased as accepted, contrary it decreased. In a study done by Kaya (13) similar results were obtained related to performance indicators and any positive progress was observed in the performance of the hospital.

In the frame of the research, an interview was made with the operational manager of the THSH about the reflection of the structural change of the hospital to the organizational performance.

Table 10. Distribution of the revolving funds income/expenditure in years of THSH

	Revolving Funds Income	Revolving Funds Expenditure	Income / Expenditure (TL) (%)	Income Increase (%)	Expenditure Increase (%)
1992	246,932,807	104,615,525	236		
1993	228,471,721	171,674,552	133	-7	64
1994	392,280,361	318,595,283	123	72	86
1995	873,946,223	498,020,344	175	123	56
1996	1,343,098,325	1,200,666,847	112	54	141
1997	2,595,432,890	2,087,660,862	124	93	73
1998	6,849,669,558	4,451,294,615	154	163	113
1999	11,179,783,052,793	10,689,795,170,038	104	63	140

* Interview with Hüseyin Karabağ, Ministry of Health Operational Manager of Turkish Higher Specialization Hospital, 23th March 2001, time:9.30-11.00

The Manager of the hospital stated that, as a result of the decentralization, the hospital has taken the top line in Turkey in regard to the circulating capital income in 1999, the collection of payments from insurance foundations has become faster than before, and the elections for the management council has effected the motivation of the staff positively. Another interview on the change in the hospital was made with the Deputy Head of Hospital Affairs Department of General Directorate of Curative Services, Ministry of Health.**

The Deputy had also taken part at the preparation stage of the Regulations that was issued in 1995. The Deputy was on the opinion that the change realized in structure of THSH has not effected the organizational motivation positively, and he also listed the reasons of this situation under several topics. They are as follows:

- Specific laws, especially related to financing, that support the decentralization could not be issued.
- Some necessary regulations that were to be issued by the Ministry to support the decentralization were not issued in time and urgent.
- The troubles arisen in staff recruitment and employment due to the cancelling of the law that forms the base for the decentralization since the related items which provided the possibility to employ contracted staff were opposing the Constitutional Law.

CONCLUSION AND DISCUSSION

Through decentralization of hospitals in Turkey some betterments such as participatory administration and auto-control, profitableness and productivity, rational planning of health manpower and qualified personnel procurement

through employment of contracted personnel, wage policy according to success levels of employees, decreasing the bureaucracy in purchasing goods and services were aimed. The performance indicators and the activities of the THSH, where the decentralization model was implemented, were inquired in terms of the aims listed above. The THSH could not be structured at the autonomous health enterprise status in terms of administration and finance as expected.

In the light of our results, many reasons that caused the unsuccessful transformation of the hospital to a health enterprise within the recommended structure were revealed. Policies are formulated and implemented within the specific historical context, and outcomes are depend on time and place (14). The reasons of failure are grouped under three topics in general. The problems that stem from the Ministry of Health take place in the first group. The Ministry has not issued the required Regulations yet. Among these Regulations are The Regulation on Working Procedures and Principles of Enterprise Accountancy, the Regulation on Enterprise Purchase, the Regulation on Discipline and Registration Superiors, and the Regulation on Appointment and Transfer. Ministry of Health has continued its interference like appointing the staff preferred by the Ministry. This situation has effected rational planning of manpower in a negative way. Before its transformation to a health enterprise, the scientific studies have not been carried out in THSH on the service characteristics of the hospital, its physical structure and medical equipment as well as on the appropriateness to the standards for manpower and service. It might also be said that the steps to be followed in a reform policy formation process in Turkey have been neglected. As Walt stated, policy analysis is an established research and academic discipline in the industrialized world, yet its application to

** Interview with Ceyhan Gökmen Ministry of Health Deputy Head of Hospital Affairs Department of General Directorate of Curative Services, Ministry of Health, , 24th March 2001, time: 13.30-15.00.

developing countries has been limited and the health sector in particular appears to have been neglected (14).

In the second group are the problems that stem from the legislation. Some of the items of 'The Basic Law for Health Services' which forms a base for the establishment of health enterprises were cancelled by the Constitutional Court. Even though this situation has brought some negotiations on the application of the cancelled items, a new legislation change was not realized.

Lastly, there are some problems stemmed from the own structure of the hospital. The 'Directory of Inner Service' which was supposed to be prepared by the Chief Doctor and the Executive Manager of the hospital was not issued. Beside this, the arrangements such the accountancy plan, the cost accounting system, the budgeting and financial report system, the stock control system, the study on total quality management were not fulfilled and also the transformation to automations was not performed completely.

Turkey has made the decision to continue health reforms in the process of adaptation to European Union. Ministry of Health has also

prepared an outline for alteration of the law cancelled before by making some modifications in the items. The outline includes the transformation to health system with steps throughout the country and the application of the family medicine model. Another legislation which is intended to be put in effect by the outline is the general health insurance.

Considering the troubles in THSH, Ministry of Health is planning again to pass to the autonomous hospital structure in steps through these legislations.

In order to solve the problems related to the reforms, all organizations are expected to be decisive, act faster, and put the related regulations and the items of the law in effect. It is thought that important lessons can be extracted from the application in THSH in the frame of the endeavours to find solutions for the problems experienced in the quality and quantity of the hospital services presented in Turkey. The main point that is necessary to be underlined at this point is the necessity of presence of scientific studies and historical realities on the base of the arrangements to be realized in future.

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ACUTE OTITIS MEDIA IN CHILDREN

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SUMMARY

Otitis media is the most common outpatient diagnosis with a bacterial etiology made in pediatric practice. The incidence is 10-20 % for each year of life up to 6 years of age and then decreases dramatically to less than 1 % by the age of 12. By definition, these patients require antimicrobial therapy and therefore, this diagnosis accounts for the greatest proportion of antimicrobial prescriptions written.

Key Words: Acute Otitis Media, Children

ÖZET

Çocuklarda Akut Otitis Media

Otitis media, polikliniğe başvuran pediatrik hastalarda en sık karşılaşılan ve etiyolojisinde bakterilerin yer aldığı hastalıklardan biridir. İnsidansı ilk 6 yaşa kadar her yıl için %10-20 iken, 12 yaşından itibaren bu oran dramatik olarak %1'in altına düşmektedir. Bu hastaların tedavisinde antimikrobiyal içeren reçetelerin en büyük bölümünü oluşturmaktadır.

Anahtar Kelimeler: Akut Otitis Media, Çocuklar

After respiratory infections, inflammation of the middle ear is the most prevalent disease of childhood. The other areas of the temporal bone which can be contiguous with the middle ear, including the mastoid, petrous apex and perilyabyrinthine air cells, may also be involved. Otitis media can be further divided into acute otitis media (AOM) without effusion, otitis media with effusion (OME), chronic suppurative otitis media (COM) with or without cholesteatoma, and atelectasis of the tympanic membrane, middle ear or mastoid. Acute otitis media is usually suppurative or purulent, but serous effusions may also have an acute onset (1).

Epidemiology and Pathogenesis:

The peak age for attacks is between 6 and 18 months. The incidence is 10-20 % for each year of life up to 6 years of age and then decreases dramatically to less than 1 % by the age of 12. Till 3 years of age almost two thirds of children have

had at least one episode of AOM, and up to one half have recurrent AOM after 3 years old. The risk factors for AOM is as follows (1-4):

1. Sex (Males have more middle ear disease than females.)
2. Occurrence of the first episode age (If the first episode occurs in early ages the recurrence rate is higher.)
3. History of severe or recurrent AOM in patients or one of twins. (Suggesting a genetic basis for the disease)
4. Environmental factors
 - a. Allergy
 - b. Exposure to smoke,
 - c. Breast-feeding (infants who are breast fed for as little as 3 months have less disease in the first year of life than children who are not breast-fed)
 - d. Season

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Several factors contribute to the predisposition of infants to middle ear infection. The eustachian tube is short, the orifice patulous and easily compressed, and its horizontal position hinders drainage.

The route of infection is presumed to be through the eustachian tube in most cases, although hematogenous infection is conceivable. During the act of swallowing, fluid in the nasopharynx may be propelled up the eustachian tube to the middle ear.

Adenoidal hypertrophy, nasopharyngeal tumors, malocclusion, developmental defects such as cleft palate, connective tissue disease, barotrauma and allergy are the primary factors underlying recurrent or chronic middle ear disease.

Etiology:

Streptococcus pneumoniae, *H. influenzae* and *M. catarrhalis* are the most responsible microorganisms in AOM (Table 1) (2-5). At least one middle ear fluid sample was taken from 772 AOM cases; *S. pneumoniae*, *H. influenzae* and *M. catarrhalis* were isolated in 201 (26%), 174 (23%), 177 (23%) children respectively. The incidence of *S. pneumoniae* in AOM peaked at 12 months, whereas the incidence of *M. catarrhalis* in AOM showed the first peak at 6 months and *H. influenzae* in AOM at 20 months. *Streptococcus pneumoniae* AOM relation with season has lesser than with other two agents. *Haemophilus influenzae* rarely caused the first 2

AOM episodes (13%) but became increasingly common after the third episode (approximately 32%) (5).

Signs and Symptoms:

Acute otitis media is the inflammation of the area behind the tympanic membrane (TM, eardrum). The middle ear contains air and is placed behind the eardrum. When the eardrum vibrates, tiny bones within the middle ear transmit the sound signals to the inner ear. In the inner ear, nerves are stimulated in order to relay the sound signals to the brain. The eustachian tube, which connects the middle ear to the nose, normally ventilates and equalizes pressure of the middle ear. When child's ears "pop" while yawning or swallowing, the eustachian tube adjusts the air pressure in the middle ear (1, 3, 6).

Acute otitis media is an infection that produces pus, fluid, and inflammation in the middle ear. Older children often complain about ear pain, ear fullness, or hearing loss. Irritability, fussiness or difficulty in sleeping, feeding or hearing may be seen in infants. Fever may be present in a child of any age (1, 3).

These symptoms are frequently associated with signs of upper respiratory infection, such as a runny or stuffy nose or a cough. Severe ear infections may cause TM rupture. If TM rupture occurs the pus then starts to drain through out of the middle ear and into the ear canal. The hole in the eardrum from the rupture usually heals after medical treatment (1, 3).

Table 1: Bacterial pathogens isolated from middle ear fluids in children with AOM

Pathogen	Mean (%)	Range (%)
<i>Streptococcus pneumoniae</i>	39	27-52
<i>Haemophilus influenzae</i>	27	16-52
<i>Moraxella catarrhalis</i>	10	2-27
<i>Streptococcus pyogenes</i>	3	0-11
<i>Staphylococcus aureus</i>	2	0-16
None or nonpathogens	28	12-35

Although the incubation period is variable, otitis media usually develops 4 to 7 days after upper respiratory tract infection (1).

Diagnosis:

The tympanic membrane can not be adequately seen while partially occluded by cerumen. (7-10) Cerumen removal by curette is essential and should be regularly used. If the wax is dry or deep in the auditory canal then cerumenolytics and/or warm water irrigation may be necessary.

Pneumatic otoscopy has been advocated as an important adjunct to assist in diagnostic accuracy of AOM (9, 10) yet most physicians find it inconvenient or remain unconvinced. Four characteristics of the TM should be evaluated and described in every examination (position, mobility, colour, degree of translucency). The normal TM is in the neutral position (neither retracted nor bulging), pearly gray, translucent and responds briskly to positive and negative pressure, indicating an air filled space. The abnormal TM may be retracted or bulging, and immobile or poorly mobile to positive and/or negative air pressure. The colour of the eardrum is of minor importance although patients with AOM more often have a red TM. The key differentiating features of AOM compared to OME on physical exam relate to TM position. In AOM the TM almost always is bulging and in OME it is usually retracted or, occasionally, it is in neutral position. The TM is thickened in both AOM and OME, thereby reducing visibility through it. Sometimes a yellow or grayish middle ear effusion can be seen behind the TM in either condition.

Tympanometry and acoustic reflectometry each have attributes which make them of value in providing information about the possible presence of a middle ear effusion (1, 3, 8-10). The sensitivity, specificity, positive predictive value and negative predictive value of the two instruments has been assessed in comparison with pneumatic otoscopy, audiometry and tympanocentesis findings (11, 12). As a result

both of them have some limitations. Acoustic reflectometry has the advantage of not requiring a seal within the canal which improves its usefulness in the crying child because a reading can be obtained when a child stops crying to take a breath. Tympanometry provides additional information about actual pressures within the middle ear space (13).

Myringotomy is not necessary routinely for the patient with intense pain and imminent rupture of the membrane it provides dramatic relief. (14-17). Selective use of tympanosynthesis may improve diagnostic accuracy because it validates or refutes the physicians' impression after visual examination. Certainly proper restraint of the patient and excellent visualisation of the TM are essential; mild sedation may also be helpful in some cases. Tympanosynthesis should be performed and it is beneficial (14).

Radiography:

Roentgenographic evaluation of the temporal bone is indicated when complications or sequelae of otitis media are suspected or present. Plain radiographs are of limited value in the diagnosis of mastoiditis or cholesteatoma; computed tomography and magnetic resonance imaging are more precise and should be obtained if a suppurative intratemporal or intracranial complication is suspected (3).

Complications and sequelae:

Suppurative complications of acute infection of the middle ear are now uncommon in areas where children have access to medical care. However contiguous spread of infection may be responsible for mastoiditis, petrositis, labyrinthitis, brain abscess and meningitis. Impairment of hearing associated with fluid in the middle ear. Sensorineural hearing loss is uncommonly associated with otitis media (1, 3).

The most common etiologic factors of serous otitis media are untreated or deficiently treated AOM. Serous effusions of the middle are believed

to originate as a physical phenomenon secondary to blockage of the eustachian tube and negative pressure in the middle ear cavity. The inciting cause of the obstructing edema or lymphoid hyperplasia may be nasopharyngeal inflammation, allergy or barotrauma. The increasing recognition of serous otitis media in the antibiotic era suggests that some cases represent incompletely resolved bacterial infections of the middle ear, but proof of this hypothesis is lacking (1-4).

Treatment:

Antimicrobial therapy is one of the cornerstones in the management of AOM but some studies have suggested that its routine use is not indicated (17-19). As the most cases of AOM resolve spontaneously (20), antimicrobial therapy is not always necessary. Nonetheless, complications such as mastoiditis may be developed, so that (16); routine use of antibiotics were recommended. It is probably not possible to determine a priori which cases of AOM will result in suppurative complications, it is likewise not possible to determine which cases require antimicrobial therapy and which will resolve spontaneously. Therefore, it appears prudent to consider all cases of AOM candidates for antimicrobial therapy in order to minimize the likelihood of complications. Some authors recommend watchful waiting for 48 to 72 hours before initiating antibiotic therapy (16). This approach may be feasible in children over two years of age if good follow-up can be assured; therefore, decisions about whether to withhold antibiotics therapy initially must be made on a patient-by-patient basis.

The most frequent etiological bacterial agents are *S. pneumoniae*, *H. influenzae*, *M. catarrhalis*, group A streptococcus and *S. aureus*. Viruses continue to cause a substantial minority of cases (1, 3-5), and antibiotic therapy would not be expected to affect the outcome. With the increasing prevalence of beta-lactamase-producing (penicillin-resistant) strains of *H. influenzae* and *M. catarrhalis*, alarms have been

sounded about the wisdom of routinely using aminopenicillins (such as amoxicillin) as the standard first-line antimicrobial for uncomplicated AOM. Despite theoretical concerns about the diminishing usefulness of amoxicillin, it continues to be as effective as any other oral antimicrobial agent for childhood AOM. Most comparative trials of antimicrobial therapy in AOM have failed to demonstrate a difference in effectiveness between amoxicillin and any other agent. Their use may be associated with relatively high rates of side effects and may increase the pressure for selection of multiple antibiotic-resistant strains of bacteria (Table 2). Therefore, because of its excellent track record (for infections due to penicillin-susceptible and-resistant bacteria), low cost, safety and acceptability to patients, amoxicillin remains the drug of choice for uncomplicated AOM.

What is a reasonable expectation for response to therapy?

One can reasonably expect that the symptoms of AOM (fever, irritability and ear pain) will resolve within 72 hr. of initiation of antimicrobial therapy. If symptoms persist after this length of therapy, the child should be re-evaluated to determine if the infection is persisting or has evolved into one of the suppurative complications. If the patient has complied with the prescribed therapy and the symptoms, such as pain and fever, have persisted, a change in antimicrobial regimen is appropriate. The different agents from which to choose are listed in Table 2 (3). Whereas the symptoms of AOM listed above should resolve promptly with antimicrobial therapy, the middle ear effusion may persist for up to three months despite bacteriological cure (15). Therefore, persistence of middle ear fluid after a full course of antibiotic therapy of AOM is not an indication for therapy continuation or for institution of treatment with different drugs.

The role of parenteral therapy in AOM

With the advent of extended spectrum

Table 2: Antibiotics for therapy of child with acute otitis media (3)

Antibiotic	Dose (mg/kg/24hr.)	Frequency	Treatment period (day)
Amoxicillin	80-90	tid	10
Amoxicillin-clavulanate	80-90 mg of amoxicillin	tid	10
Trimethoprim/sulfamethoxazole	8/40	bid	10
Erythromycin-sulfisoxazole	40	qid	10
Cefaclor	40	tid	10
Cefixime	8	od	10
Cefuroxime axetil	30	bid	10
Cefprozil	30	bid	10
Clarithromycin	15	bid	10
Azithromycin	Day 1: 10 mg,, 2-5 days: 5 mg	od	5
Ceftriaxone	50 mg/kg	od	1

cephalosporins with prolonged half-life (eg, ceftriaxone), the option of parenteral therapy with a single dose has become feasible (21). Today there is, at present, little published evidence that parenteral therapy provides any advantage to the conventional 10-day oral therapy. Furthermore, the use of such broad-spectrum agents may hasten the emergence of antibiotic-resistant organisms. Except in extraordinary situations, parenteral therapy should not be employed for simple uncomplicated childhood AOM. If a child appears to be too ill instead of the standard oral therapy, a diagnosis other than AOM should be entertained and admission to hospital should be considered.

What is the optimal antimicrobial management of treatment failures?

As stated above, the symptoms of AOM (fever, irritability and otalgia) should resolve within 72 hr. of initiating antimicrobial therapy. Failure of symptomatic response to appropriate therapy (with evidence of compliance) constitutes a

treatment failure. The optimal management of such patients is controversial and various approaches have been advocated (22). A tympanosynthesis should be considered for both therapeutic (relief of pressure and pain) and for diagnostic (recovery of the etiologic agent) purposes. If a tympanosynthesis is not practical, consideration should be given to adding amoxicillin-clavulanate or selecting one of the alternative agents from Table 2. If a tympanosynthesis is performed, the antibiotic choice should ultimately be guided by the etiological agent and antimicrobial susceptibility (1-5).

Supportive therapy:

Supportive therapy, including analgesics, antipyretics and local heat, is usually helpful. An oral decongestant may relieve some nasal congestion and antihistamines may help patients with known or suspected nasal allergy. Antihistamines, decongestants and corticosteroids are not effective in the actual treatment of AOM, however (1).

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VENOUS DISEASES

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SUMMARY

Venous diseases mostly occur due to gravity induced hemostasis in the lower extremities. Some occupations which necessitate long time motionless standing, bad foot care, use of estrogen and progesterone, gestation, intraabdominal malignancies, hypercoagulopathy syndroms, Behçet's disease, some vasculitis, right heart failure, hepatic cirrhosis, congenital malformations, iatrogenic or traumatic reasons increase the risk of venouse diseases. In this article, lower extremity varicose diseases, complications and treatments are discussed in the light of current literatures as a collected study.

Key Words: *Varicose Diseases, Varicosity, Venous Diseases, Lower Extremities, Venous Ulcer.*

ÖZET

Venöz Hastalıklar

Venöz hastalıklar, çoğunlukla alt ekstremitelerde yerçekiminden kaynaklanan hemostaz nedeniyle oluşurlar. Hareketsiz ayakta durmayı gerektiren bazı meslekler, kötü ayak bakımı, östrojen ve progesteron kullanımı, gebelik, batin içi maligniteler, hiperkoagülopati sendromları, Behçet hastalığı, bazı vaskülitler, sağ kalp yetmezliği, hepatik siroz, konjenital malformasyonlar, iatrojenik veya traumatic nedenler venöz hastalıkların oluşma riskini artırırılar. Bu makalede, alt ekstremitte variköz hastalıkları, bunların komplikasyonları ve tedavileri güncel literatürlerin ışığında bir derleme formunda tartışılmaktadır.

Anahtar Kelimeler: *Variköz Hastalıklar, Varis, Venöz Hastalıklar, Alt Ekstremiteler, Venöz Ülser.*

Venous diseases are diffuse and proliferative diseases. In contrast to arterial diseases they make expansive progress. The function loss of the venous valves can cause venous dilatation and even aneurysm of venous vessels. Histologically, smooth muscle of varicose veins display atrophy. The basis of the venous diseases is the venous reflux which is due to venous valve insufficiency. The inflammatory influence of the static blood, that is under the gravity induced pressure increase, causes damage to the surrounding tissue. The statically remained blood is the reason for varicose complications and symptoms. These symptoms and complications of the varicose

veins are especially under the knee where the vessels are smaller in size and greater in number. The relationship between venous diseases and Restless Leg Syndrome (RLS) should be examined well. RLS is seen together with venous diseases commonly, in a high ratio. Telangiectasis and innocent reticular veins sometimes may be findings of venous diseases where RLS may be seen. Estrogen and progesterone are additional risk factors.

To understand the venous diseases; the anatomy of the lower extremity veins should be known well. In anatomical and functional aspects of these lower extremity veins can be catagorized

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into four: Superficial Veins, Deep Veins, Communicating Veins and Venules-Capillaries. (1)

Superficial veins: Vena Saphena Magna (VSM) starts in front of the medial malleolus, continues on the anteromedial and drains into the femoral vein at the inguinal region. The function of the valve at the junction where VSM drains into, is important for the surgical decision making (for stripping). Vena Saphena Parva (VSP) starts behind the lateral malleolus, and drains into the popliteal vein in the midline at the posterior of the calf.

The deep veins of the calf are vena comitantes which accompany with anterior, posterior tibial arteries and peroneal arteries. These veins which are double, unite to form the popliteal vein. These deep veins are responsible for the 90% of the lower extremity venous circulation. Musculus Soleus contains a sinusoidal valveless complex, the 'Venous Lake', which is the most common site of early thrombosis formation. In the adductor canal, the popliteal vein continues as the superficial femoral vein, which unites with the deep femoral vein to form the main femoral vein.

The perforating veins are called so because they cross the lower extremity deep muscular fascia while uniting the superficial and deep systems. The valves of these veins orientate the blood flow from superficial towards the deep veins.

Local valve insufficiency of the deep and perforating veins have an important contribution in the etiology of chronic venous insufficiency and venous ulcers.

The valves are the most important and special structures of the venous system. The proximal flow depends on the presence of the thin but strong venous valves which inhibit the reflux distally. Valve insufficiencies are either primary or secondary to valve destruction but mainly secondary. Superficial and deep thrombophlebitis and deep venous thrombosis are the principal causes of valve insufficiency.

Valves of sapheno-femoral (SFJ) and sapheno-popliteal junctions (SPJ) are ostial valves, which have great anatomic importance.

In the diagnosis and especially in the surgical strategy determination of the lower extremity varicose disease, doppler ultrasonography (gray scale, color doppler and spectral analysis) and phlebography methods are used.

Indications for the Varicose Operations (2)

- 1- Asymptomatic group (cosmetic and prophylactic reasons)
- 2- Symptomatic group
 - a- *Superficial Thrombophlebitis*
 - b- *Dermatitis*
 - c- *Lipodermatosclerosis*
 - d- *Skin pigmentation*
 - e- *Ulcerating Varicose vessels*

Situations in which surgery is not considered (3)

- 1- Cases who have the surgical indications but either due to old age or associating diseases in which surgery has high risk (Varicose surgery mortality should be close to zero).
- 2- The localized varicosities not having surgical indications. In these cases to relieve the symptoms and sometimes for cosmetic purposes interventions may be applied.

When surgery is not considered; compression therapy with elastic socks, sclerotherapy, laser-microcoagulation treatment (especially in small varicoses and telangiectasis), drugs (antiedematous drugs or drugs that increase the venoactive vein smooth muscle tonus) are recommended. Drug therapy is symptomatic.

The most effective treatment to come over varicose symptoms is surgery combined with elastic socks.

Surgical treatment of the lower extremity varicose disease is examined in two forms (4, 5).

- 1- The Simple Form: The superficial venous valve insufficiency. Radical Venectomy is applied and total sufficient venous return is obtained.
- 2- The Complex Form: Radical venectomy does not supply optimum results in the second form. In these cases ligation (via supra or subfascial methods) of the insufficient perforating crus veins (77.4% is the Cockett group) is indicated.

* Radical Venectomy in the simple form consists of stripping and localized varicosity excision. The surgical strategy in short is as follows:

- * SFJ REFLUX ABSENT + THIGH PERFORATING REFLUX ABSENT: SFJ LIGATION AND STRIPPING IS AVOIDED.
- * SFJ REFLUX PRESENT + THIGH PERFORATING VEIN INSUFFICIENCY + VARICOSE VSM: SFJ HIGH LIGATION + OVER KNEE STRIPPING + MULTIPLE EXCISION OF LOCALIZED VARICOSITIES.
- * SFJ REFLUX PRESENT + PERFORATING THIGH VEIN INSUFFICIENCY ABSENT + NON-VARICOSE VSM: SFJ HIGH LIGATION + MULTIPLE EXCISION OF LOCALIZED VARICOSITIES.
- * SFJ REFLUX PRESENT + THIGH PERFORATING VEIN INSUFFICIENCY + NONVARICOSE VSM: SFJ HIGH LIGATION + OVER KNEE STRIPPING + MULTIPLE EXCISION OF LOCALIZED VARICOSITIES.

The thigh perforating vein is a Dodd group perforating vein. Surgical strategies are explained theoretically in the above conditions but insufficiency of the thigh perforating vein may not be diagnosed by the radiologist routinely. Thus; in SFJ and VSM insufficiency, if deep venous insufficiency is absent, high ligation, stripping and excision of localized varicosities should be applied.

If VSM insufficiency is combined with SFJ insufficiency in the above situations, high ligation and total stripping should be applied instead of over knee stripping.

** Operation strategies of the second form (complex form) are as follows:

** *SFJ + VSM INSUFFICIENCY + PERFORATING VENOUS INSUFFICIENCY (IF DEEP VENOUS INSUFFICIENCY IS ABSENT): TOTAL STRIPPING + PERFORATING VEIN LIGATION*

Isolated perforating vein insufficiency without deep venous insufficiency is very rare.

** *SFJ + VSM INSUFFICIENCY + PERFORATING VENOUS INSUFFICIENCY + DEEP VENOUS INSUFFICIENCY: TOTAL STRIPPING IS AVOIDED, PERFORATING VEIN LIGATION MAY BE APPLIED FOR VENOUS ULCERS OR ULCER PROPHYLAXIS.*

Varicose VSP may be excised together with VSM, but if deep venous insufficiency is suspicious or insignificant, as a precaution VSP should be preserved.

In the second form there is insufficiency in perforating and deep veins. Venous ulcers may occur. Most commonly venous ulcers are seen around the ankle where the perforating veins are in great number. Secondary varicose veins due to postphlebotic syndrome (there is venous hypertension in a large area and the valves are disturbed) may cause ulcers but is not the main factor of the ulcer process. As a general compromise, valvular malformation follows the deep vein thrombosis process. Recanalization develops within a few months, this long period is the cause of valvular malformations. In the development of ulcers, the role of perforating veins in the knee and below the knee is well known. These are usually drained into the posterior tibial vein. Posterior tibial vein is relatively dilated and insufficient in venous ulcers.

The hemodynamic changes in the venous ulcer pathogenesis is important. According to the chronological order the development is as follows; valvular insufficiency, venous hypertension, A-V shunt formation, capillary ischemia (oxygenated arterial blood bypasses the capillary system), venular thrombosis, skin ulcer.

Apart from the perforating venous insufficiency, increased ambulatory venous pressure, some venographic studies, potential ischemic reasons and the degree of deep venous system reflux may cause ulcerations.

In the diagnosis, evaluating the patient with ambulatory venous pressure, phlebography and duplex scanning (doppler) is important.

In the surgical procedure of the primary valvular and postthrombophlebitic diseases, the medial and lateral calf veins are ligated in order to decrease the venous reflux and venous hypertension on the feet.

The stripping of the saphen vein underestimating the insufficient perforating veins may cause serious ulcer recurrences. Patients with stasis changes on the skin and/or patients with active or healed ulcers, are candidates for subfascial ligation. Recurrence is more common amongst postthrombotic and especially deep venous obstructions than primary valvular insufficiency.

General treatment principles in venous ulcers:

- Conservative therapy; zinc oxide paste and sclerosing therapy.
- Ultrasound guided coil embolization.
- Subfascial endoscopic venous surgery (SEPS) (posterior intervention is preferred).
- Subfascial ligation via posterior midline or rarely transvers incision.
- Linton operation
- Anterior interventions; through the ulcer, skin incision is performed and the previously determined perforating veins are reached via separate incisions and either ligation is performed or the perforating superficial veins lying at the base of the ulcer are knotted.
- Treatment with split skin grafts

The recurrence rate is quite high in coil embolization and split skin grafting. Lately SEPS technique is the choice of treatment, in which the two year cumulative recurrence rate has been estimated 12% for primary valvular insufficiency and 28% for postthrombotic cases in Mayo Clinic (6). The Linton operation when compared to SEPS, is quite brutal.

The interpretation of doppler and phlebography in varicose surgery remains very important since the operation strategy is defined according to results of these studies. Therefore the cooperation of experienced radiologist and surgeon becomes clear in venous diseases. Surgical treatment does not give optimum results except for superficial insufficiencies. In cases of thrombophlebitis and phlebothrombosis which may end up with secondary valvular insufficiencies, early and appropriate medical treatment can prevent postthrombotic or thrombophlebitic syndrome development.

If the radiologist is not experienced enough to interpretate the doppler, classic physical examination like controlling edema which shows deep or perforating vein insufficiency may be applied to reassure the diagnosis. If deep venous insufficiency is manifest, stripping should not be applied in VSM varicosity, if it is suspicious, at least an intervention to VSP should be avoided even if it is varicosed.

As a result early diagnosis, prophylaxis, medical and appropriate surgical treatment of the venous diseases can save the patient from chronic venous insufficiency process or keep the insufficiency at minimal rate. Compression sock application is the most effective way to minimize preoperative and postoperative complications of venous insufficiency and of prophylaxis.

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CONGENITAL ANOMALIES AMONG INFANTS OF DIABETIC MOTHERS

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SUMMARY

Congenital anomalies are the most common cause of perinatal mortality in infants of diabetic mothers. Late fetal loss and metabolic abnormalities also feature in increased perinatal mortality due to maternal diabetes. Maternal hyperglycemia during early gestation is associated with an increased frequency of structural defects.

Four infants who were admitted to the Neonatal Intensive Care Unit (NICU) of our institution are presented here in a discussion of rare congenital malformations in infants of diabetic mothers.

Key Words: *Infant Of Diabetic Mother, Congenital Malformation, Perinatal Mortality.*

ÖZET

Diabetik Anne Bebeklerinde Konjenital Anomaliler

Günümüzde bir çok merkezde izlenen diabetik anne bebeklerinde perinatal mortalitenin en sık nedeni konjenital anomaliler, geç fetal kayıplar ve metabolik sorunlardır. Erken gestasyon haftalarındaki maternal hiperglisemi konjenital anomali sıklığını artırmaktadır.

Diabetik anne bebeklerinde görülen nadir konjenital anomalileri tartışmak amacıyla Yenidoğan Yoğunbakım Ünitesi'nde izlenen 4 olgu sunulmaktadır.

Anahtar Kelimeler: *Diabetik Anne Bebeği, Konjenital Malformasyon, Perinatal Mortalite*

The incidence of major congenital anomalies is two to five times greater in infants of diabetic mothers than in other infants. Poor glycemic control in the first trimester during organogenesis is thought to be the major reason for congenital malformations (1).

The most frequently seen types of malformations in infants of diabetic mothers involve the cardiovascular, skeletal, central nervous, gastrointestinal and genitourinary systems, with cardiac malformations being the most common (2).

Four infants who were admitted to the Neonatal Intensive Care Unit (NICU) of our institution are presented here in a discussion of rare congenital malformations in infants of diabetic mother.

CASE 1

A 4.0-kg male infant born at 36 weeks to a gestational diabetic mother was admitted to the NICU at the third postnatal day because of poor sucking and jaundice. Physical examination revealed dehydration, jaundice and macrosomia. The infant had hypoglycemia, indirect hyperbilirubinemia, renal failure (prerenal), hyponatremia and metabolic acidosis. Abdominal Doppler ultrasonography revealed situs inversus, and an adrenal hemorrhage was performed. The diagnosis of situs inversus totalis was confirmed with the finding of dextrocardia. The infant was treated for renal failure, hyperbilirubinemia and electrolyte imbalance and was discharged on the twelfth postnatal day.

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CASE 2

A 3.6-kg female infant born at 38 weeks to a gestational diabetic mother was admitted to the NICU on the second postnatal day because of vomiting. Physical examinations revealed jaundice, omfalitis and a first-degree systolic murmur at the second left intercostal space. Hypoglycemia and indirect hyperbilirubinemia were documented. *Staph.aureus* was obtained from umbilical cultures. A chest X-ray showed decreased pulmonary vascularity and a cardiac silhouette similar to a Coues en sabot. Although the electrocardiogram was normal, two-dimensional echocardiography established the diagnosis of pulmonary atresia, ventricular septal defect (VSD), patent ductus arteriosus (PDA) and the presence of main aortopulmonary collaterals (MAPCA). The patient was treated for indirect hyperbilirubinemia and omfalitis and was transferred to the Cardiology Department for follow-up.

CASE 3

A 2.5-kg male infant with proximal esophageal atresia and an atrioventricular channel defect was born to a diabetic mother at the 32nd week of gestation due to premature rupture of membranes. The mother had been receiving treatment for insulin-dependent diabetes mellitus for the previous 12 years. The infant had low APGAR scores and had been resuscitated at birth. Physical examination revealed hypotonia, tachypnea, cyanosis and a 2/6° systolic murmur. The patient was diagnosed with respiratory distress syndrome and congenital heart disease. A surfactant was administered, and the infant was ventilated mechanically. Gastric distension was observed at the postnatal 12th hour, and an abdominal X-ray revealed the presence of free air in the abdomen. The inability to introduce a nasogastric tube led to a suspicion of esophageal atresia. An emergency operation was performed, and gastric perforation, proximal esophageal atresia was diagnosed. A cervical esophageal cutanostomy and funduplication were performed. Echocardiography revealed an atrioventricular channel defect. The infant died at 12 days with symptoms of cardiogenic shock.

CASE 4

A 2.9-kg male infant was born by C/S at the 35th week of gestation to a 30-year-old gestational diabetic mother. The infant was large for his gestational age, and he was admitted to NICU following resuscitation. On physical examination, congenital anomalies including cleft palate, microphthalmia and glossoptosis and an obstructed airway were observed. The patient was intubated and administered continuous positive airway pressure. Echocardiography revealed intraventricular septal hypertrophy (IHSS). The patient died of airway obstruction on the second day of life.

DISCUSSION

Data from clinical series are consistent with the hypothesis that maternal hyperglycemia during early gestation is associated with an increased rate of structural defects in infants. Hyperglycemia, hypoglycemia and hyperketonemia during organogenesis have been shown to induce an increased incidence of major structural defects in animal models. Most human studies have used first-trimester glycosylated hemoglobin levels as an indicator of glycemic control during organogenesis. The incidence of major structural anomalies has been shown to increase with increased levels. Various other factors including somatomedin inhibitors, yolk sac failure, reduced intracellular myoinositol, arachidonic acid deficiency and maternal vasculopathy have been commonly associated with congenital anomalies in infants of diabetic mothers in experimental models (1-3).

When compared to the general population, no statistically significant increase in congenital malformations have been found among infants of mothers with gestational diabetes mellitus who do not require insulin during pregnancy (4,5). However, recent investigations indicate that gestational diabetes may be associated with an increased incidence of fetal malformations and perinatal mortality. Such a poor outcome is most likely confined to a subset of diabetes mellitus patients in whom diabetes was present but unrecognised before pregnancy (6,7).

Three of the presented cases are infants of gestational diabetic mothers, with Case 3 an infant of a Type I diabetic mother. This may support the observation that misdiagnosis of gestational diabetes in diabetic women in whom the diagnosis of diabetes mellitus was missed in the preconceptional period could be teratogenic.

There are no known diabetes-specific anomalies. A great diversity is seen among the types of malformations, with the most frequent involving the central nervous system (anencephaly, caudal regression syndrome, neural tube defects), the cardiovascular system (ventricular septal defect, transposition of main arteries), the gastrointestinal system (intestinal atresia) and the genitourinary system. Cardiac malformations are the most common (1-3).

Among the rare malformations seen in infants of diabetic mothers, the presented cases featured situs inversus totalis, pulmonary atresia, esophageal atresia and atrioventricular channel defect. The literature describes one infant with situs inversus and a neural tube defect (2). These two malformations are thought to be coincidental and a result of poor diabetic control during the lateralization period of organogenesis (2). Congenital anomalies such as glossoptosis are also among the rare abnormalities reported in infants of diabetic mothers.

Perinatal mortality rates of these infants decrease significantly with insulin treatment and better glycemic control of the mothers and with improvements in newborn intensive care management. However, perinatal mortality is still an important issue, with a reported 2.0-4.0% incidence of fetal demise. In many centers, congenital anomalies are the most common cause of perinatal mortality (40%) in infants of diabetic mothers. Late fetal loss and metabolic abnormalities also feature in increased perinatal mortality.

Cases 3 and 4 died of major congenital anomalies. The mother of Case 3 had a history of fetal loss during the last trimester. It is essential for the perinatologist to understand the mechanism of dysmorphogenesis in diabetic pregnancies and to apply specific strategies and practices that are effective in managing both mother and infant.

Screening programs should routinely be employed to identify those women most likely to develop gestational diabetes. Once identified, standard dietary management and insulin treatment should be introduced, if necessary, to maintain glycemic control within a narrow range.

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PERINATAL LETHAL FORM OF HYPOPHOSPHATASIA

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Saadet Arsan

SUMMARY

Hypophosphatasia is a rare bone disorder characterised by low or absent levels of the serum and tissue non-specific alkaline phosphatase necessary for normal bone mineralisation. The severe infantile form of the disease is autosomal-recessively inherited and is usually lethal in the neonatal period.

We report a neonate with congenital hypophosphatasia in which prenatal diagnosis could not be carried out, in spite of the termination of the mother's former pregnancy due to abnormal skeletal development. This report indicates the importance of the index case and the need for more careful prenatal evaluation of subsequent pregnancies.

Key Words: Hypophosphatasia, Neonate.

ÖZET

Perinatal Letal Hipofosfatazya

Hipofosfatazya, normal kemik mineralizasyonu için gerekli olan serum ve doku alkalin fosfataz enzim aktivitesinin azalması veya olmaması ile karakterli nadir bir kemik hastalığıdır. Yenidoğan döneminde ölümle sonuçlanan hastalığın ağır infantil formunda kalıtım otozomal resesiftir.

Burada bir önceki gebeliği iskelet anomalisi nedeniyle sonlandırılmış ancak sonraki gebelikte prenatal tanı yapılmamış bir konjenital hipofosfatazya olgusu, prenatal tanının vurgulanması amacı ile sunulmaktadır.

Anahtar Kelimeler: Hipofosfatazya, Yenidoğan

Hypophosphatasia is a rare and lethal metabolic bone disease characterised by low or absent serum and tissue-alkaline phosphatase activities resulting in insufficient bone mineralisation. Hypophosphatasia has been reported throughout the world and affects all races; however, it is especially prevalent in Manitoba, Canada, where about one in 25 individuals is a carrier and 1: 2.500 newborns manifest severe disease. Six forms of hypophosphatasia have been identified. The perinatal (lethal), infantile, childhood and adult types are distinguished from one another by the age at which clinical manifestations and bone

lesions are recognised. Patients with dental manifestations but no skeletal disease are considered to have odontohypophosphatasia. Pseudohypophosphatasia is a rare variant of hypophosphatasia characterised by normal serum alkalinephosphatase (ALP) activity (1). The severe infantile form of hypophosphatasia is autosomal-recessively inherited and is lethal in the neonatal period (2).

We report a neonate with congenital hypophosphatasia in which prenatal diagnosis could not be carried out, in spite of the termination of the mother's former pregnancy because of abnormal skeletal development.

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Patient report

A 1.97-kg female infant was born at 35 weeks of gestation by an emergency cesarian section due to fetal distress. The mother was a healthy 30-year-old whose prenatal care featured apparently normal sonographic evaluation. The infant's first and fifth minute APGAR scores were 1 and 6 respectively, and she was resuscitated and immediately admitted to the neonatal intensive care unit.

The infant was the result of the fourth pregnancy of consanguineous parents. Their first two children were healthy males; however, a third pregnancy was terminated in the second trimester due to abnormal skeletal development. There was no specific diagnosis of the deceased fetus, which had multiple skeletal malformations.

Our patient had abnormalities apparent at birth, including short, bowed extremities, dimples in the extensor surfaces, generalised hypotonia, a small funnel chest, soft calvaria, very large fontanel, extremely wide cranial sutures, low-set ears and a depressed nasal bridge (Figure 1). Serum alkaline phosphatase activity was measured at birth and in the subsequent days. The measurements revealed very low levels of 15, 9 and 10 IU/L, respectively (Normal: 185-340). Serum calcium and phosphorus concentrations were 7.9 and 8.5 mg/dl, respectively.

Radiographs showed hypomineralisation of all bones, especially the calvarium, long bones and ribs; widening of sutures; and poor ossification of the calvarium, marked in the frontal and parietal bones. Bowing was apparent in the distal portions of both upper and lower extremities. Bony spurs protruded laterally from the midshaft of the ulnae and fibulae. The major long bones had unmineralised osteoid protruding into the metaphysis, resulting in a moth-eaten appearance. (Figure 2).

The infant was in severe respiratory distress and was ventilated mechanically. She survived for six days, after which she suffered from increasing respiratory compromise due to her small chest and increased secretions.

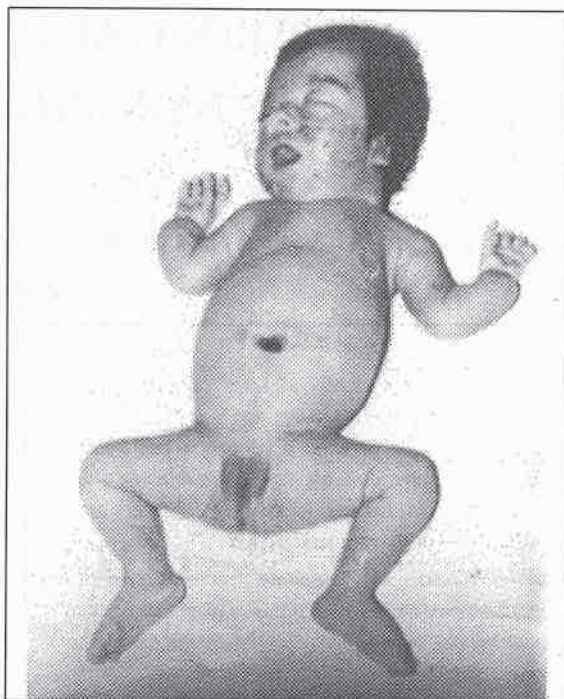


Figure 1. Physical appearance of the patient.

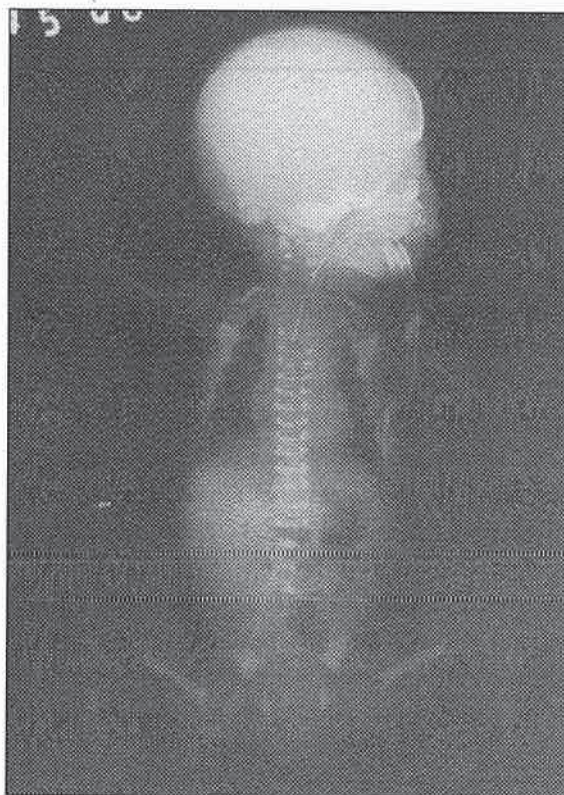


Figure 2. Radiograph of the patient. Note the moth-eaten appearance of the major long bones resulting from unmineralised osteoid protruding into the metaphysis.

Discussion

Generalised disruption of skeletal mineralisation in infants or children causes rickets, a result of subnormal levels of vitamin D, calcium and/or phosphorus. Hypophosphatasia, on the other hand, is a rare bone disorder characterised by low levels of the tissue non-specific alkaline phosphatase (TNSALP) necessary for normal bone mineralisation. Blood and urine levels of ALP substrates, including phosphoetanolamine, inorganic pyrophosphate and pyridoxal phosphate, have been found to be increased in patients with hypophosphatasia (1).

The severity of hypophosphatasia correlates directly with the degree of deficiency of serum and tissue TNSALP activity. Perinatal hypophosphatasia, which manifests at birth, is lethal. The disease can be diagnosed by the typical appearance of short extremities, soft calvarium and respiratory distress. Characteristic radiological findings and low serum alkaline phosphatase levels confirm the diagnosis. Infants with this lethal form of hypophosphatasia usually die within a few days from respiratory insufficiency due to reduced thoracic volume and hypoplastic lungs (1).

The frequency of consanguinity and recurrence rates associated with the disease indicate an autosomal recessive mode of

inheritance in the neonatal and infantile forms (3). Prenatal diagnosis of perinatal and infantile hypophosphatasia is desirable, since the disease is lethal and there is no current treatment available (4). Methods of prenatal diagnosis include ultrasonic fetal examination and measurement of ALP activities in amniotic fluid, cultured amniotic fluid cells or chorionic villi (5). However, the reliability of these tests has not been definitively established. More reliable results have been noted with DNA analysis. The TNSALP locus maps to chromosome 1p34-p36 (4,6), and it has been shown recently that a mutation in the TNSALP gene resulted in the lethal form of hypophosphatasia. Prenatal diagnosis can be carried out using the ALP cDNA as a probe. Since impaired bone mineralisation can be observed using ultrasound, scanning seems to be another available method for prenatal diagnosis. Hypophosphatasia should be considered in the presence of polyhydramnios, low bone echogenicity and signs of prominent falx cerebri (7).

Accurate prenatal ultrasonic diagnosis was not possible in our case, nor was there a precise diagnosis of the former deceased fetus or genetic counselling for the mother. This indicates the importance of diagnosis of the index case and the need for more careful prenatal evaluation of subsequent pregnancies.

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PRIMARY OLIGODENDROGLIOMA OF THE LATERAL VENTRICLE: COMPUTED TOMOGRAPHY AND MAGNETIC RESONANCE IMAGING FINDINGS

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SUMMARY

Oligodendrogliomas commonly arise from the cerebral hemispheres and may secondarily invade the adjacent ventricles. Primary intraventricular oligodendrogliomas are quite rare. In this report we describe computed tomographic and magnetic resonance imaging findings of a right lateral ventricular oligodendroglioma in a patient presenting with seizures and amnesia.

Key Words: *Oligodendroglioma-Computed Tomography - Magnetic Resonance Imaging*

ÖZET

Oligodendroglioma: CT ve MRI Görüntüleme

Oligodendrogliomlar genellikle serebral hemisferden köken alır; nadiren ventrikülleri sekonder olarak invaze edebilir. Primer intraventriküler oligodendrogliomlar oldukça enderdir. Bu olgu bildirisinde, unutkanlık ve nöbet geçirme yakınması ile başvuran 54 yaşındaki erkek hastada saptadığımız, primer intraventriküler oligodendrogliomun Bilgisayarlı tomografi ve Magnetik rezonans görüntüleme bulgularını sunduk.

Anahtar Kelimeler: *Oligodendrogliom, Bilgisayarlı Tomografi, Magnetik Rezonans Görüntüleme*

Oligodendrogliomas comprise 5-9% of all primary intracranial gliomas (1). They mainly occur in the cerebral hemispheres. Intraventricular location as a primary site is rare (1). Although the histologic features of intraventricular and parenchymal oligodendrogliomas are similar, their imaging characteristics and presenting symptoms are quite different. In this paper we present computed tomography (CT) and magnetic resonance imaging (MRI) features of a purely intraventricular oligodendroglioma.

Case Report

A 54-year-old male patient presented with a two-month history of amnesia and seizures.

Physical and neurological examinations were normal. Routine laboratory investigations were unremarkable.

CT showed a partially calcified right ventricular mass, which was conforming to the shape of the ventricle. The mass was rather heterogeneous with cystic areas isodense with the cerebrospinal fluid and solid portions isodense with gray matter (Fig 1). The right lateral ventricle was dilated. MRI revealed a lobulated mass in the right lateral ventricle adjacent to the foramen of Monro and septum pellucidum, with displacement of the midline structures. The right lateral ventricle was dilated. There was no peritumoral edema. The cystic parts of the lesion

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had a higher signal intensity than cerebrospinal fluid on T1- and proton density weighted images. The solid portions were iso-hyperintense than

cortical gray matter on T1-weighted images and heterogeneously hyperintense compared with gray matter on T2-weighted images (Figs. 2,3).

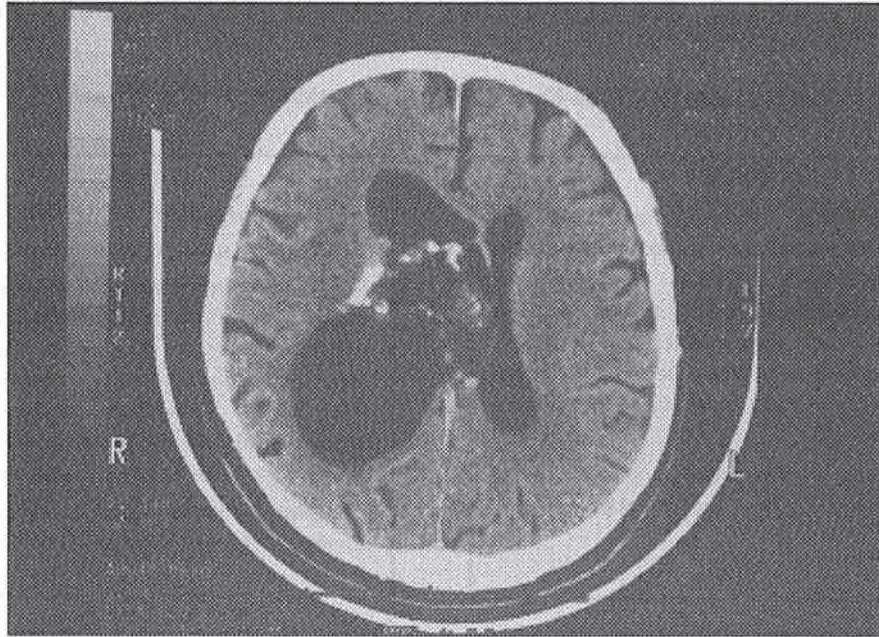


Figure 1: Non enhanced axial CT section at the level of the lateral ventricle shows a partially calcified mass near the foramen of Monro with cystic and solid areas and dilatation in the right lateral ventricle.

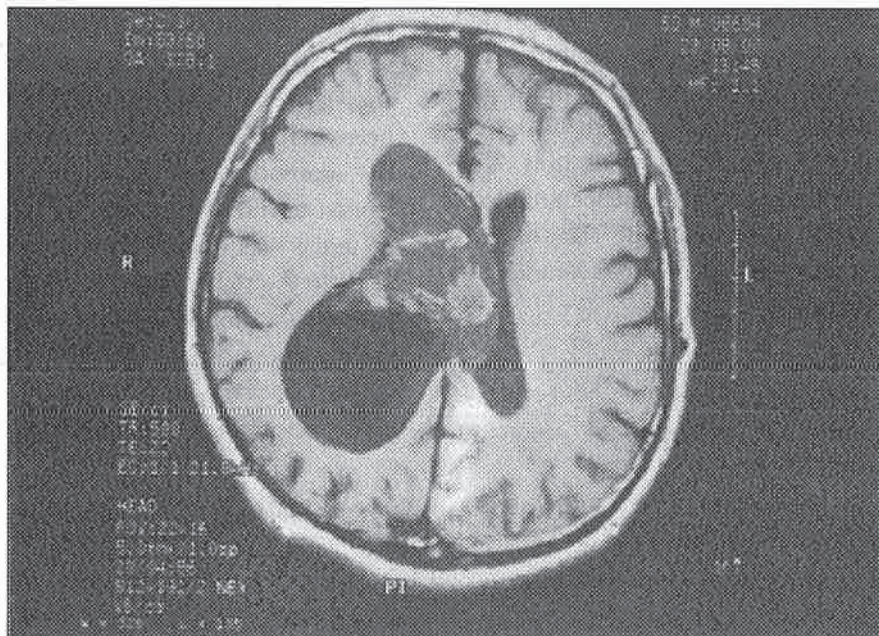


Figure 2: On non enhanced T1-weighted axial spin echo (SE) MR image, the cystic areas of the lesion are hyperintense than cerebrospinal fluid and the solid portions are iso-hyperintense compared to cerebral gray matter.

Especially on T2-weighted images numerous hypointense septae rendered the lesion a multiloculated appearance (Fig. 3). The solid parts of the lesion enhanced remarkably

after the injection of gadolinium (Fig. 4). At surgery, the tumor was removed subtotally. Pathological examination revealed oligodendroglioma.

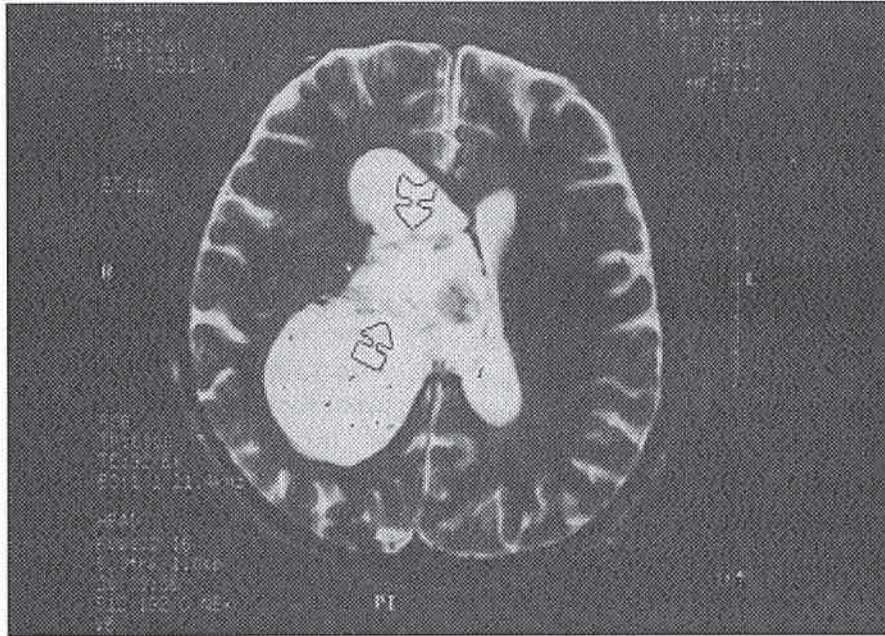


Figure 3: On the T2-weighted image, the cystic parts appear isointense with cerebrospinal fluid, and the solid parts are slightly hyperintense than gray matter. Note several hypointense septa rendering the lesion a multiloculated appearance (arrows)

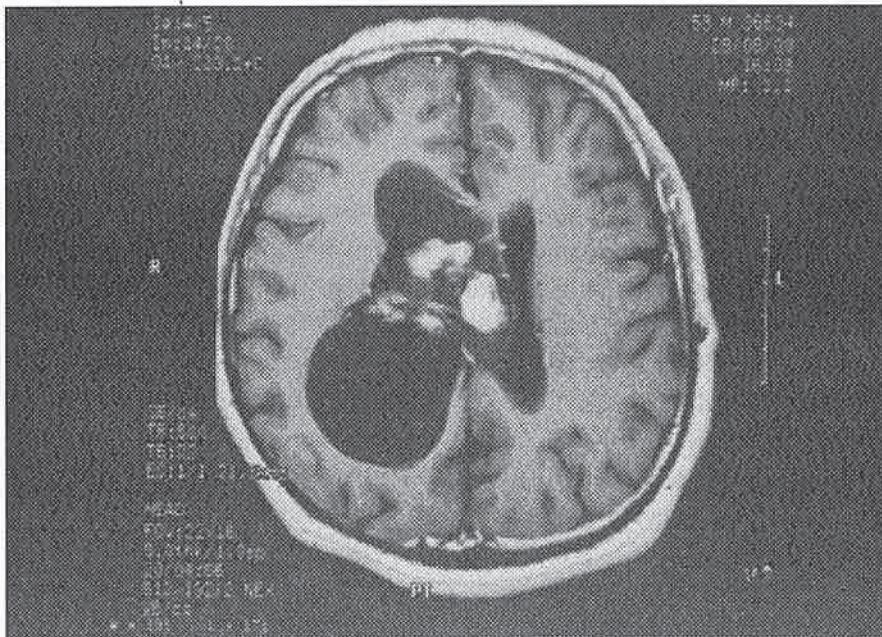


Figure 4: Gadolinium enhanced T1-weighted image reveals marked enhancement in the solid parts of the intraventricular mass.

Discussion

Oligodendrogliomas are composed of small oligodendrocytes of a rather uniform size (2). Nearly half of the lesions also contain astrocytes and spongioblasts (1,2). The majority occur in the cerebral hemispheres, particularly in the frontal lobes. Only a small percentage originates from within the ventricles. Although intraventricular oligodendrogliomas have the same histological features as the parenchymal lesions, they have different clinical and imaging characteristics (3).

The intraventricular oligodendrogliomas are slightly more common in females (3), unlike the hemispheric variety, which shows a male predominance (4). Intraventricular oligodendrogliomas frequently occur in the third and fourth decades of life. While it has previously been stated that intraventricular oligodendrogliomas present at an earlier age (5) several recent series showed no significant age difference between the parenchymal and intraventricular tumors (3-5). Although seizure is the most common presenting symptom of hemispheric oligodendrogliomas (4), the intraventricular variety commonly causes signs of increased intracranial pressure (3,5). The symptomatology consisting of seizures and amnesia and relatively older age of our patient differ from the typical presentation of an intraventricular oligodendroglioma.

Intraventricular oligodendrogliomas are most commonly found in the anterior parts of the lateral ventricles (3). There is only one case involving the occipital horn and atrium of the lateral ventricle (6). In our patient the mass was predominantly in the anterior part of the right lateral ventricle close to the foramen of Monro and adjacent to the septum pellucidum.

The matrix of an intraventricular oligodendroglioma tends to be hyperdense relative to the brain parenchyma (3), unlike parenchymal oligodendrogliomas, where the matrix is usually heterogeneous or hypodense (7). Low-density foci representing areas of necrosis and hyperdense areas caused by hemorrhage may be identified in both parenchymal and

intraventricular types. Nodular and plump calcifications are more prominent in the parenchymal type (3,5,8). Unless malignant features are present edema is not associated with either type (8). Contrast enhancement is mild or moderate in the intraventricular oligodendrogliomas but is unusual in the parenchymal variety.

Experience is limited on MR imaging of intraventricular oligodendrogliomas. MRI is superior over CT in determining the origin and extent of the lesions (3), which is crucial for planning of surgery. In our patient the intraventricular mass lesion had a heterogeneous signal intensity on both T1- and T2-weighted images with cystic and solid portions and linear hypointense septal structures. The solid portions of the lesion enhanced remarkably on postgadolinium images.

Lateral ventricular masses that may be confused with intraventricular oligodendrogliomas are subependymomas, astrocytomas, ependymomas, gangliogliomas, subependymal giant cell tumors, central neurocytomas and meningiomas.

Subependymomas occur in the same age group as intraventricular oligodendrogliomas but favor the fourth ventricle and usually have an extraventricular component (2). Rarely, however, a subependymoma involves a lateral ventricle, near the foramen of Monro, when the differential diagnosis from oligodendrogliomas is quite difficult. The matrix of a subependymoma is usually isodense with brain parenchyma and may demonstrate minimal enhancement after contrast administration (9).

Ependymomas are difficult to distinguish from subependymomas but they usually enhance after contrast administration and tend to calcify in an irregular manner (2). Some are partly cystic. Ependymomas are seen in a younger age group than subependymomas.

Like intraventricular oligodendrogliomas gangliogliomas also affect the young adults, however they are usually found in the anterior third ventricle rather than in the lateral ventricles.

Astrocytomas may be found in the lateral ventricles. Their typical location is in the frontal horns, more anterior than the intraventricular oligodendrogliomas. They usually enhance and have a hyperdense matrix (9).

Subependymal giant cell astrocytomas are typically seen in patients with tuberous sclerosis. They usually occur in the region of foramen of Monro and are accompanied by other cerebral findings of tuberous sclerosis (2), which are helpful in distinguishing them from intraventricular oligodendrogliomas.

Choroid plexus papillomas also show marked enhancement and usually occur in the trigones of the lateral ventricles, in contradistinction to oligodendrogliomas, which tend to locate more anteriorly near the foramina of Monro. Patient age is another important differential diagnostic feature in choroid plexus papillomas, which are typically seen in young children (10).

Central neurocytoma, a recently described variant of neuroblastoma, may occur in the lateral ventricles and be difficult to distinguish

from the oligodendroglioma on routine histopathological examinations. These lesions have a better prognosis than oligodendrogliomas and they usually enhance (2).

Intraventricular meningiomas tend to occur in the atria of the lateral ventricles. They are typically isointense with the cortical gray matter and show marked and homogeneous enhancement (2,9).

Epidermoid and dermoid tumors may also present as intraventricular masses. Epidermoids are frequently seen in the fourth ventricle. On MRI epidermoids are heterogeneously isointens with cerebrospinal fluid and do not enhance after gadolinium administration. Dermoid tumors and teratomas can easily be identified by the presence of fat (9).

Due to their size and deep location, intraventricular oligodendrogliomas are not generally amenable to complete removal. Most cases are excised subtotally followed by CSF shunting to treat or prevent hydrocephalus.

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ELASTOFIBROMA DORSI: MAGNETIC RESONANCE IMAGING FINDINGS IN TWO CASES

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SUMMARY

Elastofibroma dorsi is a pseudotumoral mass of unknown pathogenesis that is usually seen in elderly patients. We report two cases of histologically proven elastofibroma dorsi, each presenting with painful periscapular masses. Magnetic resonance imaging showed periscapular tumoral mass with low to intermediate signal intensity with interspersed areas of high signal intensity on both T1 and T2 weighted images. After I.V. administration of gadopentate dimeglumine, these lesions demonstrated mild enhancement. Awareness of the characteristic location and radiologic appearance of this benign lesion prevents unnecessary radical interventions.

Key Words: *Elastofibroma, Magnetic Resonance Imaging, Chest, Neoplasms.*

ÖZET

Elastofibroma Dorsi: 2 Olgunun Manyetik Rezonans Görüntüleme Bulguları

Elastofibroma dorsi, patogenezi belli olmayan ve sıklıkla yaşlarda görülen, periskapular yerleşimli yalancı tümöral (psödötümöral) kitle lezyonudur. Bu yazıda, histolojik olarak elastofibroma dorsi tanısı konmuş, şiddetli periskapular ağrı ile gelen iki olguya ait manyetik rezonans görüntüleme bulgularını sunduk.

Anahtar Kelimeler: *Elastofibroma-Manyetik Rezonans Görüntüleme*

Elastofibroma dorsi is a rare benign fibroelastic lesion, mostly found in the periscapular region in elderly (1). It arises on the back, deep to the rhomboid and latissimus dorsi muscles, adjacent to the inferior angle of the scapula (2). The lesions are periscapular in 99% of the reported cases (2) and bilateral in 10-60% of cases (1-2).

Elastofibroma is well known by the pathologists but has received attention recently in the radiologic literature with the advent of computed tomography (CT) and magnetic resonance imaging (MRI). This is a report of two patients who were evaluated preoperatively by MR imaging and operated successfully with

marginal resection after biopsy.

CASE REPORTS:

Case 1: A 45-year-old female, without a previous history of trauma presented with a painful mass located in the right inferior periscapular region, first noticed 7 months ago. Pain was radiating to the back and right shoulder. Physical examination revealed a tender, firm mass with a diameter of 10 cm, located at the inferomedial aspect of the right scapula. No associated lymphadenopathy was found. Routine laboratory tests were normal except a mild decrease in the haemoglobin level. An MR imaging examination was performed with a 1.5 T MR unit (GE Medical Systems, Milwaukee, WIS, U.S.A). T1-weighted spin echo (TR/TE = 600/18

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msec) and T2-weighted FSE (TR/TE = 4000/90 msec) images were performed in axial and coronal imaging planes. On T1-weighted and T2-weighted images a soft tissue mass of 8x10x10 cm, deep to rhomboid and latissimus dorsi muscles, low to intermediate in signal intensity relative to the adjacent skeletal muscles with interspersed areas of high signal intensity was seen (Figure 1). Mild linear enhancement was observed in the soft tissue mass following the injection of gadopentate dimeglumine (Figure 2). A diagnosis of elastofibroma dorsi was suggested according to the findings on MR imaging. An incisional biopsy was performed. Histopathologic examination revealed the diagnosis of elastofibroma dorsi. The mass was removed by wide local excision.

Case 2: A 60-year-old male patient was admitted to our hospital with mild pain and swelling on the left periscapular region. There was no history of trauma. Physical examination revealed a firm mass measuring 8x3x3 cm at the inferior part of the left scapula. Routine laboratory findings were normal. An MR imaging examination was performed with a 1.5 T MR unit (GE Medical Systems, Milwaukee, WIS, U.S.A).

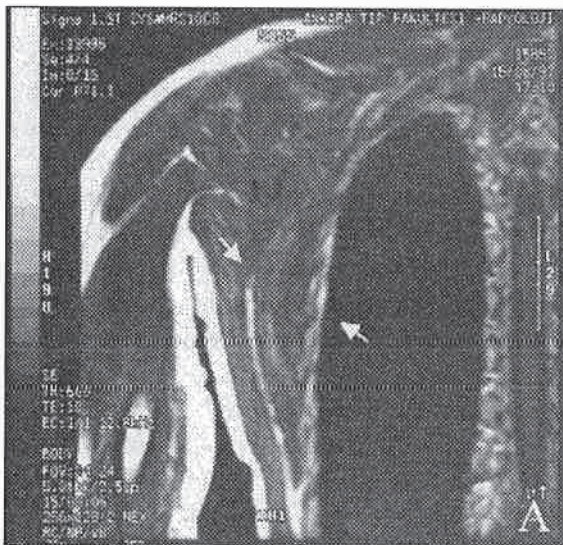


Figure 1: On T1-weighted coronal image a soft tissue mass of 8x10x10 cm, deep to rhomboid and latissimus dorsi muscles, low to intermediate in signal intensity relative to the adjacent skeletal muscles with

T1-weighted (TR/TE = 708/229 msec) and T2-weighted (TR/TE = 4000/80 msec) were obtained in axial and coronal imaging planes. A 8x3x3 cm soft tissue mass, inferior to left serratus anterior muscle, low to intermediate in signal intensity relative to the skeletal muscles with intervening

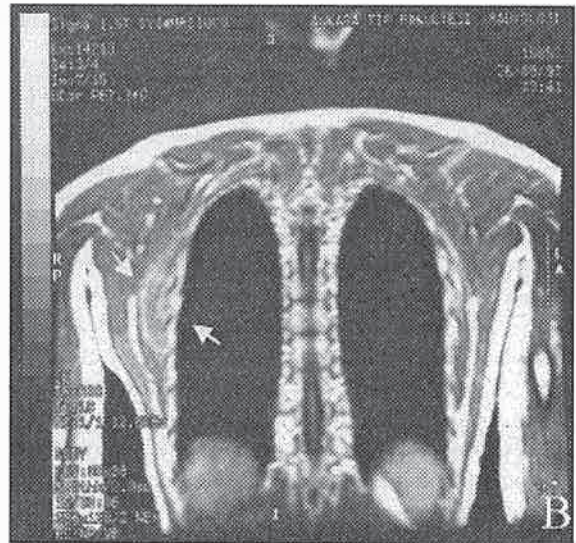


Figure 2: Mild linear enhancement was observed in the soft tissue mass following the injection of gadopentate dimeglumine on T1-weighted coronal

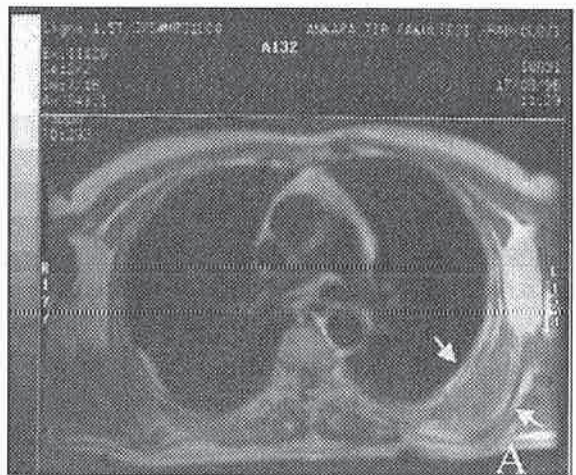


Figure 3: On T1-weighted axial image, a 8x3x3 cm soft tissue mass, inferior to left serratus anterior muscle, low to intermediate in signal intensity relative to the skeletal muscles with intervening

hyperintense areas was seen (Figure 3). The mass demonstrated mild enhancement after I.V. administration of gadopentate dimeglumine (Figure 4). A presumptive diagnosis of elastofibroma dorsi was made according to MR imaging findings. The mass was removed by wide local excision. The histopathologic diagnosis was

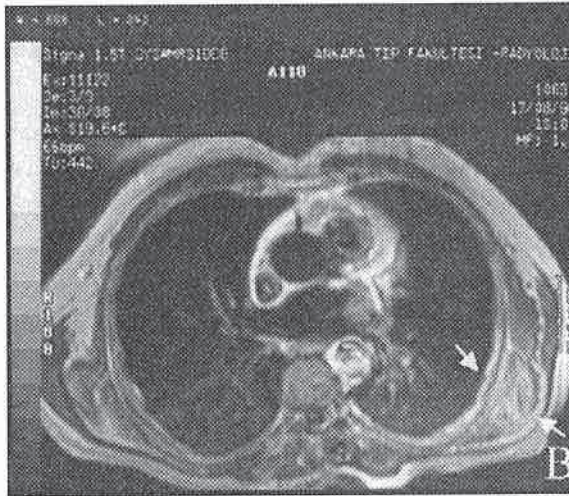


Figure 4: The mass demonstrated mild enhancement after gadopentate dimeglumine administration on T1-weighted axial image.

consistent with elastofibroma dorsi.

Discussion: Elastofibroma is a rare tumor-like process made up of a mixture of fibroelastic tissue and fat (2). It is a completely benign lesion, and has a subclinical nature as it has an obscure location and rarely causes severe pain. Hypertrophy and degeneration of elastin in a hypercellular background of mature collagen and fat lobules with no abnormal mitosis are the histologic hallmarks of the lesion (2). The lesion was reported as elastofibroma dorsi initially due to its typical location in the infrascapular and subscapular regions at the level of sixth through eighth ribs and deep in relation to serratus anterior, latissimus dorsi and rhomboid muscles.

Although the pathogenesis of these lesions is not clear, it has been suggested that, elastofibroma is a reactive process between the scapula and chest wall, caused by mechanical

friction during heavy manual labor (3). However, Stemmerman and Stout (4) found no correlation between repeated trauma and pseudotumor formation. Instead, they proposed that degenerative changes in collagen was responsible for the development of the lesion. From the history of the current two cases, a mechanical cause for the progress of the lesion has not been found. Elastofibroma is more common on the right side, presumably due to the side of patient's dominant handedness (1). In our report, it was on the right side in the first case and on the left side in the second.

The imaging features of elastofibroma dorsi have been characterized recently. Plain chest radiographs may show a soft tissue density mass in subscapular region (5). Computed tomography (CT) shows an inhomogenous soft tissue mass with attenuation almost the same as that of skeletal muscle and containing linear low-density streaks in most of the cases. But in some cases it could be relatively homogenous, with an attenuation less than that of muscle (6). Sonographic appearance of elastofibroma dorsi has been recently reported as layers of hypoechoic strands in an echogenic background (7).

Magnetic resonance imaging of elastofibromas may lead to a presumptive diagnosis of elastofibroma (3). A soft tissue with signal intensity similar to that of skeletal muscle, interlaced with streaks of fat tissue is the mainly observed signal characteristic of elastofibroma dorsi (1,6,8). Although atypical for elastofibromas, mild or marked enhancement have been reported in several cases (6,8). Histological examination did not reveal a difference between the tissue composition of the elastofibromas, showing mild or marked enhancement after the administration of gadopentate dimeglumine (8). However in cases with marked contrast enhancement, a strong vascularity was demonstrated on histologic workup (8). Although the basic nature of the contrast enhancement in elastofibromas is not well understood, one should know that marked

contrast enhancement could be seen in elastofibromas (8).

The differential diagnosis of a periscapular lesion with a signal intensity similar to skeletal muscle is limited and includes lesions with decreased cellularity like extraabdominal desmoid, neurofibroma, cicatricial fibroma and malignant fibrous histiocytoma (9). Normal structures can also mimic elastofibroma dorsi, like the inferior fibers of the serratus anterior muscle, which has a globular appearance especially on CT sections. As elastofibroma contains strands of soft tissue of fat signal intensity differential diagnosis must also include lipomatous lesions such as lipoma or liposarcoma and lesions containing blood, such as hemangioma, hematoma and intralesional hemorrhage (8). The variable enhancement pattern of the lesion is not a particularly striking

feature (8). Marked enhancement seen in some cases could mimic an inflammatory or malignant mass. But the characteristic location and interspersed fat with typical T1-and T2-weighted signal intensities help the radiologist for the differential diagnosis. Another helpful feature for differential diagnosis is bilaterality of the lesion. Presence of a similar periscapular lesion on the contralateral side strongly eliminates malignancy from differential diagnosis (1).

In patients who are clinically symptomatic complete surgical excision is the preferred treatment. In asymptomatic individuals excision of the lesions exceeding 5 cm in diameter is recommended (10).

In conclusion, the diagnosis of elastofibroma dorsi can be made accurately on the basis of its characteristic location and signal intensity on MR imaging. Identification of a similar lesion on the

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