

# A rare variant of squamous cell carcinoma of the tongue; spindle cell carcinoma

*Dilde nadir görülen bir yassı hücreli karsinom varyantı: iğsi hücreli karsinom*

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Spindle cell carcinoma is a rare variant of squamous cell carcinoma, and is commonly seen in the mouth, tongue and upper respiratory tract. Fifty-one year old woman presented with the swelling of right half of her tongue for one year, had undergone an incisional biopsy which was reported as differentiated squamous cell carcinoma. The patient underwent right hemiglossectomy and right neck dissection, but she died of metastatic disease after 5 months.

Diffuse tumoral infiltration consisting of fusiform cells was determined in the hemiglossectomy. Islands of atypical squamous epithelial cells were also noted within the diffuse tumoral infiltration areas. Sarcomatoid appearing tumoral infiltration was noted within the sinusoids of the three lymph nodes. Immunohistochemically, the hemiglossectomy material and metastatic lymph nodes showed strong positivity with LMWCK.

A diagnosis of spindle cell carcinoma was made depending on both histopathological and immunohistochemical findings. In this report, we present a case of spindle cell carcinoma that is a rare variant of squamous cell carcinoma.

**Key words:** *Spindle cell carcinoma, tongue*

iğsi hücreli karsinoma, yassı epitel hücreli karsinomanın nadir bir alt tipidir. İğsi hücreli karsinoma çoğunlukla ağız boşluğu, dil ve üst solunum yolu mukozalarından gelişir. Dil sağ yarısında 1 yıldır devam eden şişlik şikayeti ile merkezimize başvuran 51 yaşındaki kadın hastaya yapılan insizyonel biyopsi sonucu diferansiye yassı epitel hücreli karsinoma olarak rapor edildi. Bunun üzerine hastaya sağ hemiglossektomi ve sağ boyun diseksiyonu uygulandı. Hasta yaygın metastazlar nedeni ile operasyondan 5 ay sonra öldü.

Hemiglossektomi materyalinde iğsi hücrelerin meydana getirdiği yaygın tümöral infiltrasyon ve bu infiltrasyon içinde atipik görünümüne yassı epitel hücre adaları dikkati çekti. Sağ boyun diseksiyon materyalinden ayıklanan lenf nodüllerinden üçünün sinüzoidleri içinde sarkomatoid görünümde tümör hücre infiltrasyonu saptandı. İmmünohistokimyasal analizde hemiglossektomi materyali ve metastatik lenf nodüllerindeki bu sarkomatoid görünümdeki iğsi hücreler düşük molekül ağırlıklı sitokeratin (LMWCK) ile kuvvetli pozitif boyanma gösterdi.

Hastamızın operasyon materyalindeki tümöral gelişim hem histomorfolojik hem de immünohistokimyasal bulgular temelinde yassı epitel hücreli karsinomanın bir alt tipi olan iğsi hücreli karsinoma olarak yorumlandı.

Burada 51 yaşındaki kadın hastada dil sağ yarısından gelişmiş iğsi hücreli karsinomanın histomorfolojik ve immünohistokimyasal özelliklerini literatür eşliğinde sunuyoruz.

**Anahtar sözcükler:** *iğsi hücreli karsinom, dil*

**S**pindle cell carcinoma (SCC), which is a rare variant of squamous cell carcinoma, is most commonly seen in the mouth, tongue, face, oesophagus and upper respiratory tract. However, it was rarely reported in breast, skin, lung and endometrium in the literature (1-14). A possible relationship was reported between the SCC and radiotherapy owing to most cases encountered in the patients who had had radiotherapy (1).

In this paper, we present the morphological and immunohistochemical characteristics of spindle cell carcinoma, which was, detected in the right hemiglossectomy material of 51 year old woman.

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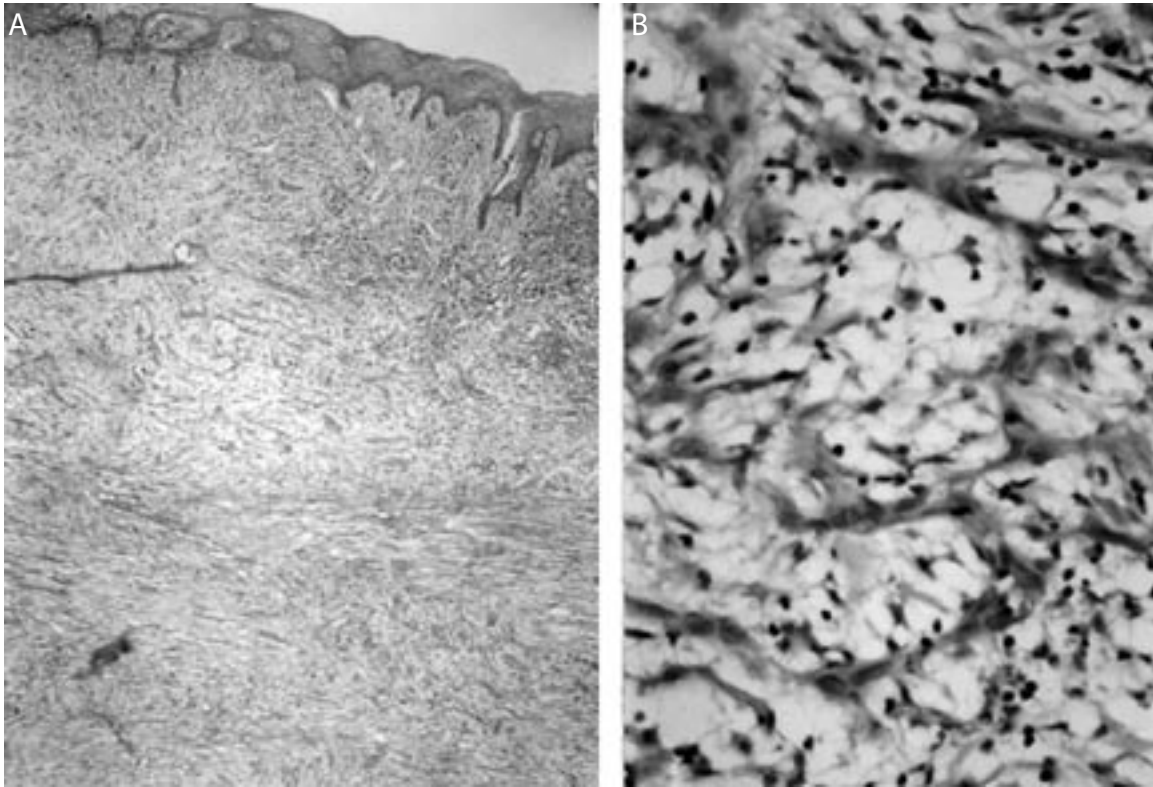


Fig. 1. A. Diffuse infiltration of the tumor cells below the squamous epithelium and within the muscle layer (HE, X25). B. Spindle shaped tumor cells that showed atypical changes (HE, X200)

### Case report

A 51-year-old woman presented with swelling at the right half of her tongue. The incisional biopsy was interpreted as differentiated squamous cell carcinoma. In addition, lymphadenopathy was detected by ultrasonography (US) in right neck region. Right hemiglossectomy and right selective supraomohyoid neck dissection was performed.

Macroscopically, the material was 4,0x3,5x1,5 cm in dimensions and had a rough mucosal surface. In sections, macroscopically, a significant lesion was not observed. Eleven lymph nodes were dissected in right neck dissection material. The specimen was fixed in 10% formalin solution and the samples that dissected from the specimen were embedded in paraffin. Five-micrometer-thick sections were prepared and were stained with haematoxylin and eosin. Immunohistochemically, LMW-CK (Immunon), HMW-CK (Immunon) and EMA (Novacastra) markers were assessed by means of Streptavidin-biotin peroxidase technique. Microscopically, the tumor nests were seen in skeletal muscle and fibroadipous tissue (Figure 1a). Tumor nests consisted of fusiform shaped, sarcomatoid appearing cells (Figure 1b). There were atypical squamous cells below ulcerated overlying epithelium. The deep excisional margin was infiltrated by the tumor. Sarcomatoid appearing

tumor metastasis was detected in the sinusoids of the three lymph nodes.

Immunohistochemically, the tumoral areas in hemiglossectomy material and metastatic lymph nodes showed strong positivity with LMW-CK (Figure 2). The focal and weak positivity was observed by EMA in these areas. HMW-CK expression was not meaningful. The case was scheduled for a second operation. In addition, radiotherapy was planned for both the tongue and bilateral neck region due to the infiltration.

The patient died due to pleural and subcutaneous metastatic disease after five months.

### Discussion

Squamous cell carcinoma of tongue is usually seen in fifth to ninth decades of life. However, there are few reported cases related to early decades in the literature (3). Spindle cell variant is very rare in childhood and adolescence. A case of spindle cell carcinoma of the tongue in a 4 year old boy has been reported by Kessler and et al (3). The tumor is usually seen in men with a male to female ratio of 2-4:1 (4,15). Potential risk factors include a history of tobacco use, poor oral hygiene, alcohol abuse and previous ionizing irradiation of the area (3).

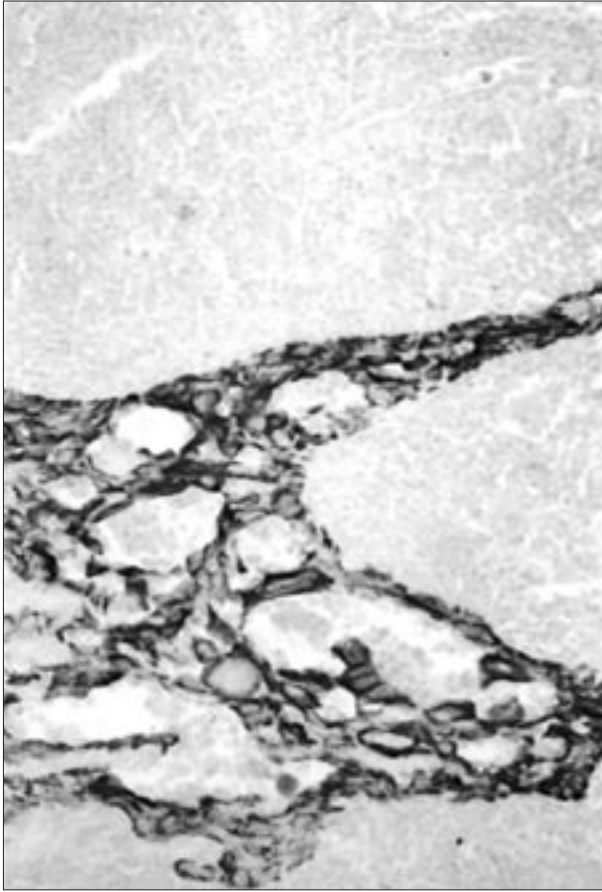


Fig. 2. LMW-CK positivity within the tumoral areas of the metastatic lymph node (HE, X100).

Histopathologically, these neoplasms are biphasic tumors. The diagnosis of SCC is usually difficult because the surface epithelium is usually ulcerated in the polypoid variants (8). In the past, these neoplasms have been classified under numerous terms such as spindle cell carcinoma, sarcomatoid squamous cell carcinoma, pleomorphic carcinoma, pseudosarcomatous carcinoma, pseudosarcoma, carcinosarcoma and metaplastic carcinoma (4,5,8). The histological characteristics and polypoid growth patterns of these unusual neoplasms suggest a specific subclass of malignant neoplasms arising in the upper aero digestive tract mucosa. The histogenesis of SCC is still controversial. Some authors believe that spindle cell component is benign stromal reaction against squamous cell carcinoma, while, the others propose that spindle cells are the metaplastic change of malignant squamous cells. Ultrastructural studies, immunohistochemistry and the characteristic metastasing potential of the sarcomatous component favour the latter opinion (1,2,4-6). The tumor within the

metastatic lymph nodes in our case also had sarcomatous appearance. In these neoplasms, the spindle shaped cell is the predominant cell type, which shows nuclear pleomorphism and identifiable mitoses. Although, these cells are morphologically different than the usual squamous cells, squamous cell origin of these cells is proven by positive keratin immunostaining and demonstrating of desmosomes and tonofilaments in the cells (5,8). In our case, also, the primary and metastatic tumor foci were showed positivity with LMW-CK and EMA. It has been documented that keratin proteins may be regarded as molecular markers for stratified squamous epithelial cells in normal tissues and in neoplasms. However, Ellis et al. demonstrated that 40% of spindle cell carcinomas would have a negative keratin stain (5). Possible reasons for the inability to detect keratin are decreased numbers of cells producing keratin, decreased amount of keratin within these cells, and decreased immunoreactivity of the keratin due to formalin fixation. Thus, a positive keratin stain confirms the diagnosis of squamous cell carcinoma, but a negative result does not rule it out (5,6,8).

It is suggested that spindle cell component could occur through the metaplasia of neoplastic squamous cells. Production of mesenchymal intercellular matrices by neoplastic epithelial cells is not unusual. Even during organogenesis, nonneoplastic epithelial cells have been shown to synthesize collagen (1). Zarbo et al. documented definite mesenchymal differentiation with osseous or cartilaginous components in some of these lesions (8). Formation of osteoid-appearing material in the spindle cell component was found in four cases reported by Ellis and et al. This finding leads to speculation that these lesions may have been osteosarcomas arising from the periosteum or alveolar bone (4). In these cases, electron microscopy can be useful to confirm the epithelial origin (1,5)

In conclusion, spindle cell component is carcinomatous in nature and can occur through the metaplasia of neoplastic squamous cells. Spindle cell carcinomas are poorly differentiated squamous cell carcinomas. Prognosis has been related with depth of invasion, polypoid exophytic growth pattern, presence of regional metastases and a history of radiotherapy (5). Surgical intervention with or without radical neck dissection is an accepted method of treatment for SCC of the oral cavity (4,16). The infiltration of deep excisional margin and lymph node metastasis were present in our case and the patient died because of metastatic disease after 5 months of surgical intervention.

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