

CASE REPORT

The adenocarcinoma of the larynx: case report with histochemical and immunohistochemical studies

Larenksin adenokarsinomu: Histokimyasal ve immünohistokimyasal değerlendirme ile birlikte olgu sunumu

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Adenocarcinomas constitute a histologically diverse group of rare laryngeal neoplasms accounting in aggregate for less than 1% of all laryngeal carcinomas. Adenocarcinoma of the larynx "not otherwise specified" (NOS) is a very uncommon neoplasia, but it shows a high degree of malignancy. We report a case of adenocarcinoma "NOS" arising in the larynx of a 60 year-old man. Histologically, tumor tissue was composed of only adenocarcinoma component. Histochemically, the adenocarcinoma cells demonstrated Alcian blue pH: 2.5 and PAS reactivity; but did not include argentaffin and argyrophil granules. Immunohistochemical studies revealed negative reactivity for desmin, HMB45 and NSE. S-100 and chromogranin was focally positive, cytokeratin was diffuse positive.

Key Words: Adenocarcinoma/pathology/surgery; immunohistochemistry; laryngeal neoplasms/pathology/surgery; laryngectomy.

Nadir görülen larengeal tümörlerin histolojik olarak farklı bir grubu olan adenokarsinomlar, tüm larengeal karsinomların %1'inden azında görülür. Bir başka şekilde spesifiye edilmeyen (nonspesifik) larenks adenokarsinomu çok seyrek görülür ve malignensi derecesi yüksektir. Bu makalede 60 yaşında erkek hastadaki larenks adenokarsinomunu sunuldu. Histolojik olarak tümör dokusu sadece adenokarsinom komponentiyle sınırlıydı. Histokimyasal olarak tümör hücrelerinde Alcian blue pH: 2.5 ve PAS ile boyanma izlendi ve arjentafin ile arjirofil granüller görülmedi. İmmünohistokimyasal olarak desmin, HMB45 ve NSE ile boyanma izlenmezken S-100 ve kromogranin ile fokal olarak ve sitokeratin ile diffüz olarak tümör hücrelerinin boyandığı görüldü.

Anahtar Sözcükler: Adenokarsinom/patoloji/cerrahi; immünohistokimya; larenks neoplazmları/patoloji/cerrahi; larenjektomi.

Adenocarcinomas constitute a histologically diverse group of rare laryngeal neoplasms accounting in aggregate for less than 1% of all laryngeal carcinomas.^[1] Adenocarcinoma of the larynx "not otherwise specified" (NOS) is a very uncommon neoplasia, but it shows a high degree of malignancy.^[2-5]

As in all the other carcinomas, men are more commonly affected than women, and the sixth and sev-

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enth decade is the most commonly affected ages.^[1] NOS by definition have glandular differentiation, but they lack in features that would put them in a more specific category, such as adenoid cystic, acinic cell or mucoepidermoid carcinomas. In the larynx, most of them appear in the upper glottic area.^[6-7]

Because of the rarity of this neoplasm and its histological and immunohistochemical features, we thought that it might be interesting to describe an observed case of adenocarcinoma (NOS) of the larynx.

CASE REPORT

A 60-year-old male was admitted to University hospital because of dysphonia, dysphagia and having a feeling of a foreign body in the throat. No predisposing factor other than smoking (30 cigarettes a day up to eighteen months before hospitalization) was detected. His family history was nonspecific. The physical examination was normal, biochemical and hematological evaluation were normal. In direct laryngoscopy, a lesion was found in the upper glottic area and biopsy was performed on April, 15 2002. The histopathological diagnosis of the biopsy specimen was adenocarcinoma, NOS. No metastatic sign was detected in the evaluation of the patient. Subsequently, total laryngectomy and right modified neck dissection was performed on April, 26 2002. No complications were seen in the postoperative course. The patient is currently healthy after operation.

The samples for the histological and immunohistochemical examinations were fixed in 10% formalin, dehydrated in alcohol and then embedded in paraffin. Numerous sections were stained with haematoxylin-eosin, Masson-Fontana, Grimelius, Periodic acid-Schiff (PAS) and Alcian-Blue pH:2.5, other serial sections were used for the cytokeratin (CK) (Zymed, 1:50, pepsin), desmin (Zymed 1:50), anti-melanoma (HMB45) (Nova, 1:30, trypsin), neuron-specific enolase (NSE) (Zymed 1:50), S-100 (Zymed 1:50), and chromogranin (Zymed 1:50) examinations.

The specimen showed a grossly exophytic-ulcerated tumor of 3x2x1.5 cm, located in the right supraglottic area (intraluminally). The tumor tissue also presented in the right infraglottic area, and infiltrated the right vocal cord, right pyriform sinus and the anterior commissure (Fig. 1). On the cut surface,

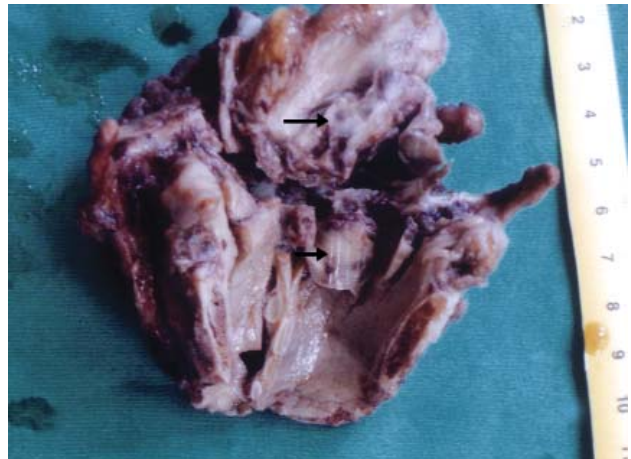


Fig. 1 - The tumor tissue appears in the right supraglottic (long arrow) and infraglottic (short arrow) areas.

grayish white tumor tissue contained foci of necrosis and hemorrhage was seen. No tumor tissue was detected in surgical margins. Metastasis was not found in twelve resected lymph nodes.

Histologically, the tumor tissue had a lobulated appearance, and was composed of polygonal epithelial cells. The cells had formed solid islands and structures resembling acini. Their size was medium to large and had polygonal shape. They had eccentrically round or oval shaped nuclei, generally with conspicuous central nucleolus and possessed amphophilic to eosinophilic cytoplasm. The cell membranes were usually distinct. The nucleus had a finely granulated chromatin. In the solid and glandular areas, the cells were polymorphous of various dimensions and the contours of their nucleus were irregular (Fig. 2).

Although the tumor cells reacted to Alcian blue pH:2.5 and PAS, these did not include argentaffin or argyrophil granules. The tumor cells also reactivity to cytokeratin (diffuse) (Fig. 3), chromogranin (focally) (Fig. 4) and S-100 (diffuse, weakly membranous; focally, weakly cytoplasmic). But they proved consistently negative for Desmin, NSE and HMB45.

DISCUSSION

Adenocarcinoma of the larynx (NOS) is an uncommon malignant neoplasm; 1949 to 1974 at the Mayo Clinic, 27 patients with laryngeal adenocarcinoma were operated on. Among them only 12 had an adenocarcinoma categorised as NOS, 9 cases were cylindromas and 6 cases had mucoepidermoid carcinoma.^[3]

1945 to 1979 Damiani et al reported, from the file of the Armed Forces Institute of Pathology, only 21 cases of larynx carcinomas: most of them were mucoepidermoid carcinomas and none of them were diagnosed as an adenocarcinoma (NOS).^[4]

1973 to 1985 Başerer et al reported, 2022 patients with laryngeal cancer were operated. Among them only 2 had an adenocarcinoma categorised as NOS (%0.09).^[8]

Nowadays it is known from literature that the adenocarcinoma of the larynx, well known as NOS,

represent less than 1% among malignant tumors of the larynx.^[1]

According to some authors the neoplasm appears most commonly in men (m/w=7.1)^[9] and the sixth and seventh decades are the most commonly affected ages.^[1] The most common areas of origin are; supraglottic area (81%), glottic region (4.2%), transglottic region (8.5%), subglottic region (6.3%).^[10]

Torre V. reported a case of primary adenocarcinoma of the arytenoid in a 74 year-old man. A peculiar characteristic of the tumor was the high percent-

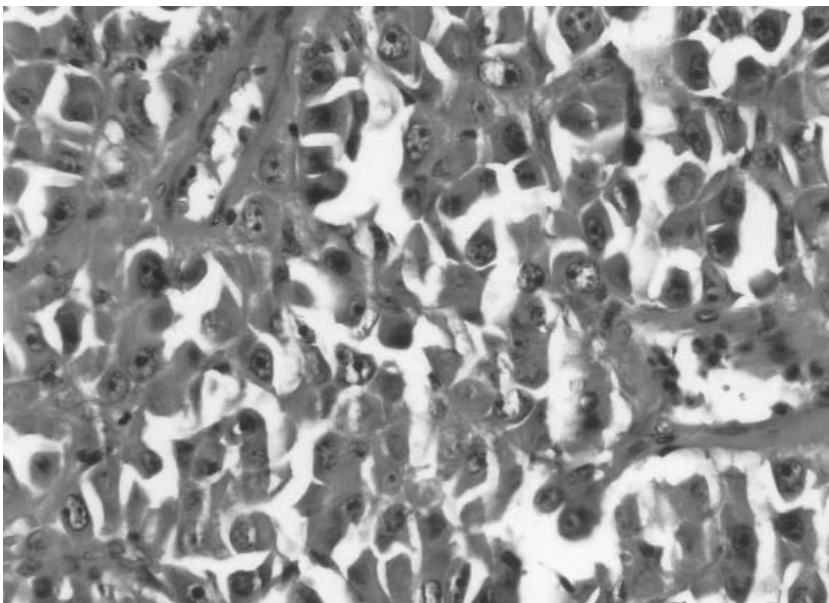


Fig. 2 - Tumor cells and glandular structures are seen (H-E stain, original magnification x 100).

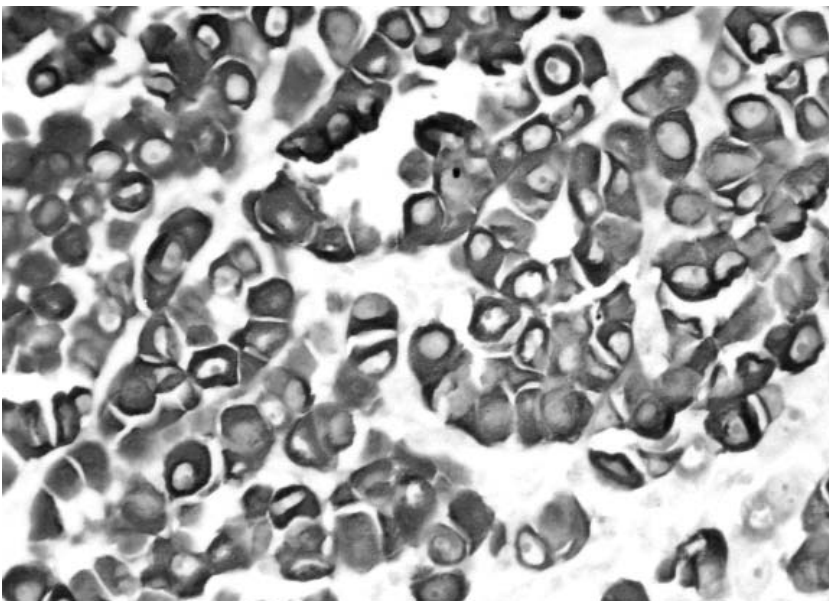


Fig. 3 - Immunohistochemical staining for cytokeratin showing diffuse positivity (immunoperoxidase reaction, Cytokeratin, original magnification x 100).

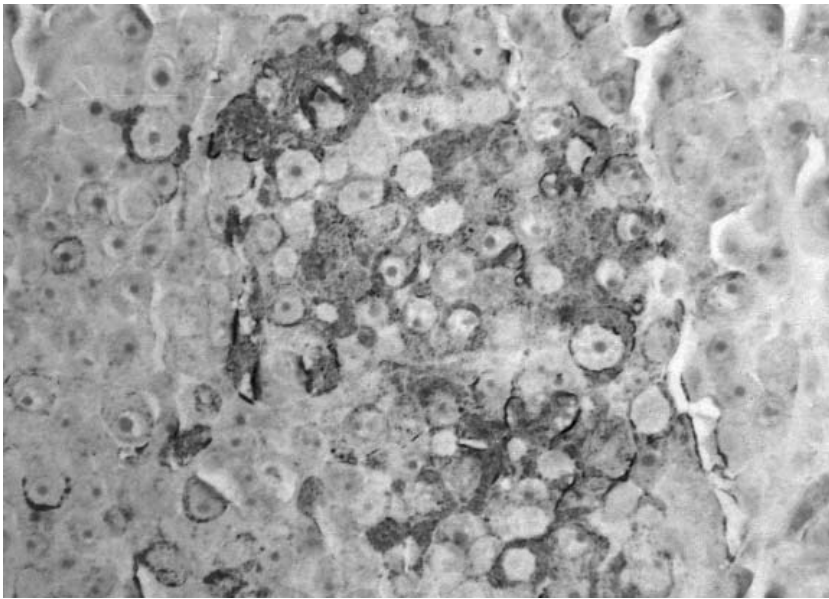


Fig. 4 - Immunohistochemical staining for chromogranin showing focally positivity (immunoperoxidase reaction, Chromogranin, original magnification x 100).

age of the intranuclear pseudoinclusions (more than 20% of the neoplastic cells).^[11]

Our patient was 60 years old and the neoplasm was located in the supraglottic region, and infraglottic region, invading vocal cord, pyriform sinus and anterior commissure.

The different incidences, in relation to the site, reflect the topographic distribution and concentration of the glands in which the neoplasm develops. Most of these originate from the seromucinous glands (minor salivary glands) found in the lamina propria submucosa, but there are probably some cases in which they arise from the subglottic surface columnar epithelium. Barnes and Gnepp's^[12] review of the literature showed that adenocarcinoma of non-specific type and adenoid cystic carcinoma are the most common, followed by mucoepidermoid carcinoma and other very rare subtypes.

Even though the origin of the neoplasm from the glands of the submucosa can not be excluded, by analogy with many malignant epithelial tumours, it is more likely that the adenocarcinoma of the larynx arises from a neoplastic transformation of undifferentiated cells of the epithelium; from these cells would also commonly developed the most frequent squamous cell carcinomas and the less frequent neuro-endocrine carcinomas.^[10]

In support of these histogenetic theories, there is evidence of malignant epithelial cancers with histo-

logical, immunohistochemistry and ultrastructural features varying from a squamous carcinoma (NOS) to a neuro-endocrine cancer: these three histotypes can be considered as extreme points of a continuous spectrum of tumoral epithelial lesions.^[10]

In accordance with the histological examination, laryngeal adenocarcinoma is formed from abortive glandular structures, with a clearly evident lumen and often containing positive mucicarmine secretion.^[10]

Because of histological findings, our differential diagnosis included adenocarcinoma, carcinoid tumor, malignant melanoma, and rhabdomyosarcoma although histochemical and immunohistochemical findings mostly supported diagnosis of the adenocarcinoma.

In our case, tumor cells proved positive for PAS, Alcian blue pH:2.5, Cytokeratin, S-100 and chromogranin. Because of the chromogranin and S-100 positivity, we believe that the origin of the neoplasm may be in neuro-endocrine cell.

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