Indian Journal of Medical & Health Sciences
Volume 3 Number 1, January - June 2016
DOI: https://dx.doi.org/10.21088/ijmhs.2347.9981.3116.10

Case Report

Spindle Cell Carcinoma of the Larynx

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IJMHS (Jan-Jun 2016) 03 (01): 71-73 / ©Red Flower Publication Pvt. Ltd.

Abstract

Primary spindle cell carcinoma of larynx is a rare tumor representing less than 3% of all laryngeal cancers. This is one of the most lethal of all malignancies associated with frequent early wide spread metastases and dismal prognosis. Spindle cell carcinoma is composed of two components sarcomatoid and epithelial cells which make the tumor biphasic. We report a case of a 51-year-old lady with spindle cell carcinoma of the glottic larynx.

Keywords: Spindle Cell Carcinoma; Glottis.

Case Report

51 year old lady presented with change in voice since last 6 months. On examination she was found to have a growth in the glottis arising from anterior commissure and predominantly anterior one third of right vocal cord. MRI Neck (Figure 1) showed soft tissue lesion arising from anterior commissure and predominantly right vocal cord measuring 1.1 x 1.3 x 1.5 cm which was extending upto the false cords invading thyroid cartilage. Bilateral paraglottic fat planes were preserved. No cervical lymphadenopathy seen. Direct Laryngoscopy and biopsy taken under general anaesthesia showed spindle cell carcinoma. Patient underwent total laryngectomy with bilateral selective neck dissection II-IV with primary TEP with provok size 6 prosthesis.

Histopathology showed an exophytic polyploidal growth measuring 2×1×1cm from anterior commissure and right true vocal cord. Tumor was seen invading the thyroid cartilage. All cut margins were clear. Microscopy sections (Figure 2 & 3) showed an ulcerated epithelium with underlying biphasic tumor composed of predominant mesenchymal component and intermingled nests of malignant squamous cells. The tumor cells were in loose sheets, fascicles with storiform appearance at places. Cells were spindled with irregular bizarre pleomorphic nuclei. Tumor giant cells were seen. Admixed nests of malignant squamous cells with polygonal appearance having abundant eosinophilic cytoplasm and focal keratin pearls were seen. Right vocal cord was infiltrated with tumor. Focal infiltration of thyroid cartilage was seen. Opinion was of Spindle cell carcinoma Glottis larynx T4a N0 M0. There was no lymphnode infiltration seen. Immunohistochemistry showed positivity to both vimentin and cytokeratin. Patient underwent adjuvant radiotherapy 70 Gy 35#. On followup of 2yrs there was no recurrence.

Fig. 1: MRI neck showing the growth involving the anterior commissure

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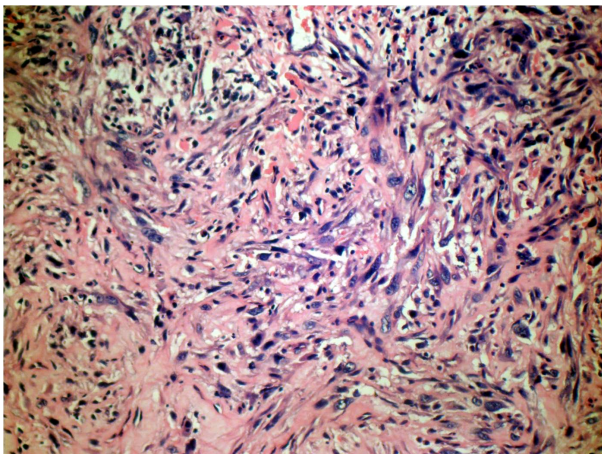

Fig. 2: Microscopic low power sections of spindle cell carcinoma

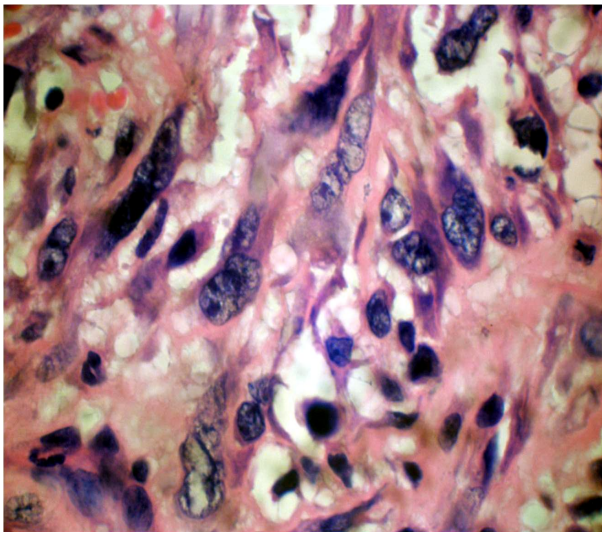

Fig. 3: Microscopic high power sections of spindle cell carcinoma

Discussion

Primary spindle cell carcinoma of larynx is a highly aggressive tumor representing less than 3% of all laryngeal cancers and was first reported in 1972 [1]. This is one of the most lethal of malignancies associated with more aggressive behaviour with frequent and early widespread metastases and dismal prognosis. Most of the cases of spindle cell sarcomas in the head and neck occur in the oral cavity, larynx, tonsil & pharynx. Most of the patients are between 60 to 70 years of age [2]. Men are more commonly affected. Symptoms are similar to those associated with other laryngeal carcinomas like hoarseness and dysphagia. Majority of spindle cell tumors are polyploidal or pedunculated or exophytic [2]. Since these lesions tend to obstruct the larynx and cause symptoms early in the disease the vast majority of tumors are found at an early stage T1or T2 which have a better prognosis[3]. These tumors tend to involve the glottis more frequently than other locations. In our case the patient was a female who had a polyploidal lesion in the anterior commissure.

Spindle cell carcinoma is a rare variant of squamous cell carcinoma in which the spindle epithelial cells resemble a sarcoma on histological examination. Earlier thought to be a collision tumor (carcinosarcoma) now it is known to be of epithelial origin with dedifferentiation or transformation to a spindle cell morphology (sarcomatoid carcinoma). Owing to its nonspecific clinical and radiological manifestations, the diagnosis of spindle cell carcinoma of the larynx is essentially based on the light microscopic examination aided by electron microscopy and immunohistochemical staining .

Microscopic feature of spindle cell carcinoma indicates the presence of two distinct epithelial derived components carcinomatous and a spindle cell component majority being the sarcomatoid component present in fasciculated pattern. On light microscopy the tumor consists of fascicles of anaplastic spindle cells with considerable number of mitotic figures. Light microscopy may find it difficult to assess the case as it may appear as a carcinoma or a sarcoma. Immuno histochemical characterisation of tumor cells using antibodies to keratin, vimentin and S100 protein is very useful in differentiating spindle cell carcinoma from true spindle cell sarcoma, melanoma and malignant myoepithelioma. On IHC the epithelial component is positive for cytokeratin and the spindle cell component is positive for vimentin. Keratin positivity was present in 65% patients of spindle cell carcinoma in a study by Lewis et al [4] suggestive of theory of epithelial origin of these tumors. Hellquist et al [5] in their study of 14 cases showed that spindle cells had a positive keratin immunoreactivity in 8 cases with some having a dual expression of keratin &vimentin filaments. These results support the hypothesis that spindle cell carcinomas are true carcinomas with mesenchymal metaplasia.

Treatment modality depends on location & stage of the tumor. Majority of cases are diagnosed in stageT1 or T2 and have good prognosis. Radiation therapy is not suggested as the mesenchymal tumors are highly resistant to radiation. There is no consensus on the treatment modality of spindle cell carcinoma yet [6]. Treatment modality generally followed is the same as for squamous cell carcinoma.

Local recurrence rates are known to be between 16-32% [7]. The incidence of cervical nodal metastases is reported between 7.5 to 26% [8]. Distant metastasis to lung and soft tissue is 5% [8] which shows the highly malignant potential of tumor behaviour.

Spindle cell carcinoma is a highly malignant variant of squamous carcinoma which is uncommon and has a poor prognosis, with five-year survival rates of 5%. The aggressive nature of spindle cell carcinoma of the larynx presents a challenge to the surgeon and hence these tumors need to be treated appropriately.

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