

Basaloid Squamous Cell Carcinoma: An Unusual Ball-Valve Laryngeal Obstruction

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Abstract

Introduction:

A rare case of basaloid squamous cell carcinoma (BSCC) of the larynx, which has not been previously reported, is described.

Case Report:

A 60-year-old man was presented to the Otolaryngology Department with progressive dyspnoea and dysphagia to solids for over a period of 1 week. Direct laryngoscopy revealed a tumour at the laryngeal aspect of the epiglottis, which prolapsed into the laryngeal inlet each time the patient inspired. This resulted in an inspiratory stridor despite adequate glottic opening and normal mobility of the vocal cords.

Conclusion:

Therefore, in cases where a ball-valve lesion causes intermittent life-threatening airway obstruction, BSCC of the larynx, though rare, must be considered as a differential diagnosis.

Keywords:

Airway obstruction, Basaloid squamous cell carcinoma, Larynx, Squamous cell carcinoma.

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Introduction

Basaloid squamous cell carcinoma (BSCC), first described by Wain et al in 1986 (1), is a rare distinct variant of squamous cell carcinoma (SCC). Despite its propensity for the upper aero-digestive tract, BSCC merely comprises less than 1% of laryngeal carcinoma(2). In this paper, a rare case of basaloid squamous cell carcinoma of the larynx, that presented an unusual ball-valve type obstruction of the laryngeal inlet, is described. This unique presentation has not been previously reported in the literature.

Case Report

A 60-year-old man presented to the Otolaryngology Department with progressive dyspnoea and dysphagia to solids for over a period of 1 week. Further questioning revealed a 6-month history of hoarseness, occasional blood stained sputum, as well as loss of weight and appetite. He had a 20-year smoking history; but denied any alcohol consumption. He had no known medical illness or family history of malignancy.

Clinical examination revealed a cachectic looking gentleman with inspiratory stridor. Flexible nasendoscopy showed an exophytic growth involving the laryngeal surface of the epiglottis, which prolapsed into the laryngeal inlet on inspiration (Fig.1).



Fig1: Laryngoscopic view illustrating an exophytic mass at the laryngeal surface of epiglottis causing airway obstruction.

This resulted in a ball-valve type obstruction and prevented visualization of the vocal cords. There were no palpable cervical lymph nodes and the rest of the ear, nose, and throat examinations were unremarkable.

Computed tomography (CT) of the neck and thorax reported a soft tissue mass in the anterior part of the epiglottis measuring 2.7 x 2.2 x 2.5 cm with extension to the base of the epiglottis, as well as bilateral cervical lymph nodes at level Ib and II, with the largest measuring 1.2 x 0.8 cm (Fig.2).



Fig 2: (a) Sagittal CT scan showing an epiglottic mass causing narrowing of the laryngeal inlet. (b) Axial CT scan showing a large mass at the laryngeal aspect part of the epiglottis.

The patient underwent a tracheostomy under local anesthesia in view of the impending airway obstruction. De-bulking of the tumour was performed and subsequent direct laryngoscopy was carried out to assess the extent of the lesion. The mass was confined to the epiglottis without involvement of the vocal cords, arytenoid cartilages and pyriform fossa.

Microscopy demonstrated islands and clusters of malignant basaloid looking cells with coarse chromatin pattern, numerous mitotic figures, and apoptotic bodies. Some cells showed presence of intercellular bridging denoting squamous differentiation (Fig.3). Immunohistochemically, the cells were positive for epithelial membrane antigen (EMA), neuron-specific enolase (NSE); and negative for chromogranin and synaptophysin. The final histopathological report revealed BSCC.

The patient refused to undergo the proposed supraglottic laryngectomy and neck dissection. Hence, he was referred to the Oncology department for chemoradiotherapy. A year later, there was local recurrence of the tumour and this eventually led to the demise of the patient.

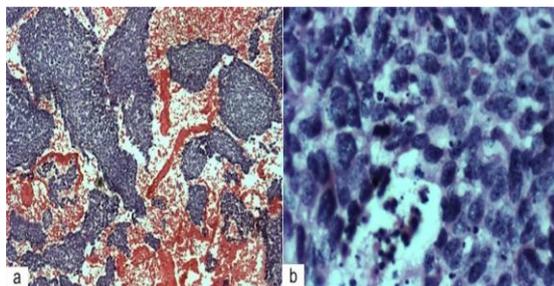


Fig 3: (a) Low power view of the cell block showing clusters of malignant cells with basaloid appearance (Haematoxylin eosin, original magnification x 40). (b) High power magnification showing malignant basaloid cells with coarse chromatin pattern, numerous mitosis, and apoptotic bodies. Some of the cells show intercellular bridges denoting squamous differentiation (Haematoxylin eosin, original magnification x 400).

Discussion

BSCC has a predilection for the head and neck region particularly the supraglottic larynx, the base of the tongue, and the pyriform sinus (3-6); but it has also been described in the esophagus, lung, thymus, anus, cervix, penis, and urinary bladder (7,8). It is believed to originate from a totipotential primitive cell in the basal layer of the surface epithelium or from the proximal ducts of salivary glands (1).

The typical patient with BSCC is an elderly male aged between 60 and 80 years. However, risk factors for BSCC remain undetermined. Soriano et al and Banks et al associated tobacco and alcohol consumption with BSCC patients (6,9); whereas Wieneke et al did not (10). Interestingly, our patient was a chronic smoker but denied any alcohol consumption. Other studies have also linked viral infections such as Epstein-Barr virus (11,12), human papilloma virus, and herpes simplex virus with BSCC.

Clinical presentation of a patient with BSCC in the larynx includes hoarseness, respiratory distress, or dysphagia. Compared to the other described cases in the literature, this patient had extremely atypical symptoms. The tumour at the laryngeal aspect of the epiglottis prolapsed into the laryngeal inlet each time the patient inhaled despite adequate glottic opening and normal mobility of the vocal cords. Consequently, the patient's inspiratory stridor, though it showed temporary relief of symptoms during coughing, essentially represented recurrent airway obstruction triggered by a ball-valve mechanism between the mass and the laryngeal inlet.

BSCC is defined as an aggressive, high grade, variant of SCC composed of both basaloid and squamous components (13). Basaloid cells have hyperchromatic nuclei and scant cytoplasm, with prominent peripheral palisading and frequent comedo-type necrosis (13). Histological diagnosis can prove to be challenging due to the heterogeneous cellular composition of BSCC and its non-specific macroscopic features. The differential diagnosis of BSCC includes adenoid cystic carcinoma, adenosquamous carcinoma, and neuroendocrine carcinoma.

Nevertheless, there are several distinguishing features to differentiate BSCC from the rest. True ducto-glandular differentiation and intracellular mucin are found in adenosquamous carcinoma while adenoid cystic carcinoma contains a myoepithelial component and lacks squamous differentiation (13). Neuroendocrine markers such as chromogranin and synaptophysin help discern BSCC from neuroendocrine carcinoma (13). In this case, both histopathological and immunochemical findings were crucial in obtaining the final diagnosis of BSCC.

Consensus regarding treatment of BSCC has yet to be established. Aggressive multimodality treatment is usually

advocated with surgery, followed by radiotherapy and chemotherapy. In cases of locally advanced BSCC of the larynx, Soriano et al proposed an organ conservation approach with initial chemotherapy followed by radiotherapy (6). However, total laryngectomy with neck dissection, due to the increased likelihood of cervical lymph node involvement, is usually preferred. Our patient unfortunately refused surgery and eventually succumbed to local recurrence of the tumour a year later.

There is an ongoing debate over the prognosis of BSCC compared to conventional SCC. Although some studies have demonstrated similar outcomes in both BSCC and SCC (9,14), other studies believe that BSCC has a worse survival outcome (1,5,15). Fritsch et al proposed that BSCC's poor prognosis is unrelated to its location within the larynx (15), disease stage, and therapeutic strategy. However, BSCC tends to be present in advanced stages resulting in a poorer global prognosis. The prevalent supraglottic location of these tumours usually causes a delay in the diagnosis, as the tumour has to infiltrate into the vocal cords to produce symptoms.

Conclusion

In cases where a ball-valve lesion causes intermittent life-threatening airway obstruction, BSCC of the larynx, though rare, must be considered as a differential diagnosis.

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