International Journal of Otorhinolaryngology and Head and Neck Surgery
Seal S et al. Int J Otorhinolaryngol Head Neck Surg. 2026 Jun;12(3):438-441
https://www.ijorl.com
pISSN 2454-5929 | eISSN 2454-5937

DOI: https://dx.doi.org/10.18203/issn.2454-5929.ijohns20261513

Case Report

Basaloid variant of squamous cell carcinoma of the larynx: a rare and aggressive subtype with subglottic extension

Sayoni Seal, Brig J. R. Galagali*

Department of ENT and Head and Neck Surgery, Bharati Hospital, Pune, Maharashtra, India

Received: 13 July 2025
Revised: 21 April 2026
Accepted: 04 May 2026

***Correspondence:**
Dr. Brig J. R. Galagali,
E-mail: jeevan.galagali@gmail.com

ABSTRACT

Basaloid squamous cell carcinoma (BSCC) is a rare and aggressive variant of oral squamous cell carcinoma (OSCC) that was first identified as a separate histopathological entity. It is regarded as a high-grade tumour with increased propensity for metastasis to distant sites. The histological hallmark of BSCC is its dimorphic pattern of presentation with a characteristic basal cell component associated with a squamous cell component. It was included in the revised edition of the World Health Organization (WHO) classification in 1991. In general, it has a predilection for affecting the head and neck region, particularly the upper aerodigestive tract, i.e., larynx and hypopharynx. In the oral cavity, BSCC has commonly been reported in the tongue, though it has been described in other locations such as floor of the mouth, palate, retromolar trigone, and gingival mucosa. Herein, this report presents a case of BSCC arising in the supraglottis with extension into the subglottic and hypopharynx.

Keywords: Basaloid variant, Squamous cell, Carcinoma, Larynx

INTRODUCTION

Basaloid squamous cell carcinoma (BSCC) is a rare and aggressive histological variant of squamous cell carcinoma, first described by Wain et al in 1986.[1] It is characterized by a distinctive biphasic pattern consisting of basaloid and squamous components, and is associated with a higher propensity for regional and distant metastasis compared to conventional squamous cell carcinoma. BSCC most commonly arises in the upper aerodigestive tract, particularly involving the larynx, hypopharynx, and oropharynx. Among these, laryngeal involvement is relatively uncommon but clinically significant due to its aggressive behavior, submucosal spread, and tendency for late presentation. Patients often present with nonspecific symptoms such as hoarseness, dysphagia, or neck swelling, which may delay diagnosis.[2]

Histopathological examination remains the gold standard for diagnosis, with characteristic features including basaloid cells arranged in nests, lobules, and cords, along with high mitotic activity and areas of necrosis. Immunohistochemistry aids in differentiating BSCC from other poorly differentiated neoplasms. Given its rarity and aggressive nature, there is limited literature regarding optimal management strategies. Early diagnosis and a multidisciplinary approach are essential to improve prognosis.

In this report, we present a case of basaloid squamous cell carcinoma arising from the supraglottis with extension into the subglottis and hypopharynx, highlighting its clinical, radiological, and histopathological features along with management considerations.

CASE REPORT

An early 50s-year-old male patient presented with a chief complaint of change on voice since the last 4 months, which was insidious and gradual. The patient also complained of right-sided neck swelling for 1 month. The swelling was gradual and slow. A history of weight loss of

4 kgs in one month was also present. There was no significant past medical, and family history. He had a history of tobacco chewing (smokeless tobacco) for 30 years, with a frequency of 10–12 per day. He also had a history of alcohol consumption for the same period, with a frequency of 180 ml of whiskey per day.

Clinical examination revealed right-sided neck swelling 3×2 cm with splaying of the laryngeal cartilages. Skin over the swelling was normal and non-adherent. A single right level III lymph node was palpable (1.5×1 cm), firm in consistency, non-matted and non-tender.

Oral examination revealed bad oro dental hygiene with nicotine-stained buccal mucosa.

However, the palate, floor of the mouth and base of the tongue were normal with no restriction of tongue movements.

Fibreoptic laryngoscopy was performed which revealed an exophytic growth involving the supraglottic with non-visualisation of vocal cords. Pooling of saliva was also noted (Figure 1).

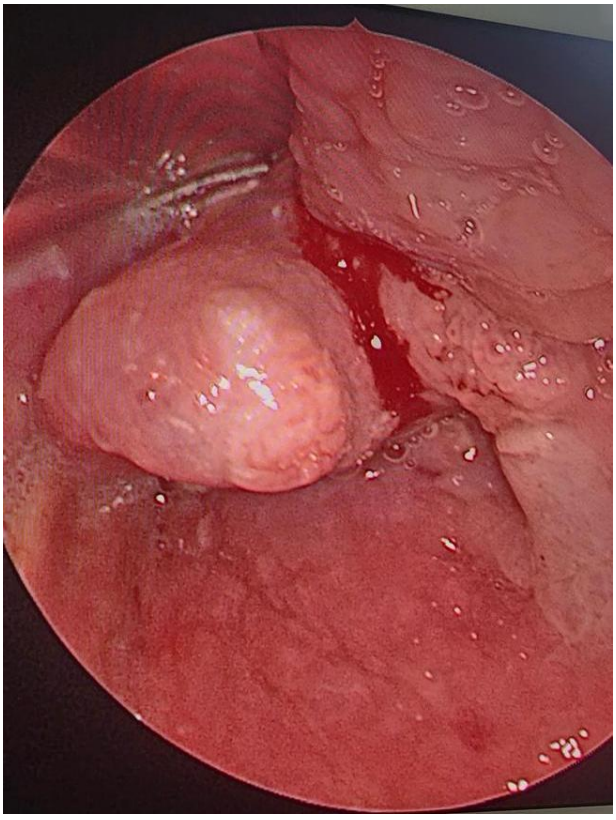

Figure 1: Fibreoptic laryngoscopy image showing an exophytic growth involving the supraglottic with non-visualisation of vocal cords. Pooling of saliva was also noted.

Based on the clinical features and extended examination a provisional clinical diagnosis of carcinoma of the supraglottis was made. The patient was advised to get an HRCT of the neck and thorax, which revealed a heterogeneous density lesion in the right supraglottic region involving the Right pyriform sinus measuring (3.21×2.11 cm). Right cervical lymphadenopathy was also noted at levels II, III and IV, which appeared to be neoplastic. HRCT Thorax, however, showed no abnormalities.

After obtaining written consent from the patient, tracheostomy under local anaesthesia followed by direct laryngoscopy and biopsy was performed under general anaesthesia.

DL scopy revealed an exophytic growth involving the right pyriform fossa, right aryepiglottic fold, right pharyngoepiglottic fold extending upto right vallecula and right true and false vocal cords.

Multiple biopsies were taken and sent for histopathological examination.

The specimens were routinely fixed, processed, and stained with hematoxylin and eosin. The stained sections revealed that dysplastic stratified epithelium is seen invading the connective tissue in the form of nests, islands, and lobules. A few areas showed epithelial cells proliferating in the form of chords interconnecting with each other. Islands of epithelium were made up of basaloid appearing cells with a peripheral palisaded arrangement, showing large vesiculated nuclei with an increased nuclear-to-cytoplasmic ratio and scant amphophilic cytoplasm. Surface epithelium showed features of dyplasia.

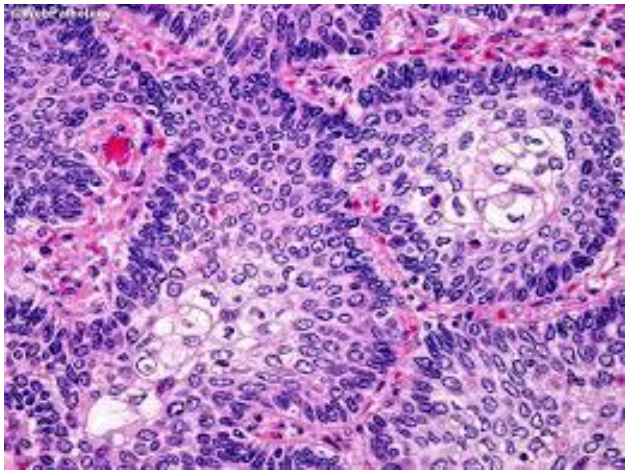

Figure 2: The photomicrograph shows dysplastic stratified squamous epithelium invading the connective tissue in the form of nests and lobules.

Mitotic figures were also abundant. Stroma around the tumor was composed of fibrous connective tissue infiltrate, along with chronic inflammatory cells, chiefly composed of lymphocytes (Figure 2). Based on the histopathological picture and computed tomography (CT) findings, a diagnosis of Basaloid squamous cell carcinoma

of supraglottic, with extension into subglottis and hypopharynx was made cTNM staging of T4a2bMo was derived. Due to the widespread involvement of the tumour as well as its aggressive nature, the patient was advised to undergo systemic chemotherapy for 8 cycles followed by concurrent radiotherapy and chemotherapy for a total of 6 cycles.

Patient was put on Paclitaxel and Carboplatin regimen for a total of 8 weeks, followed by Concurrent radiotherapy and a Cisplatin regimen for a total of 6 cycles.

A 6-month follow-up of the patient was kept. Videolaryngoscopy performed at the end of 6 months showed 70% remission of the tumour. Deccanulation of the tracheostomy was done after 6 months following a retrograde laryngoscopy to assess glottic patency.

DISCUSSION

BSCC of the larynx is a rare but aggressive variant of squamous cell carcinoma, characterized by high-grade histological features and a worse prognosis compared to conventional laryngeal SCC.[3] Its clinical and pathological behavior makes early diagnosis and aggressive treatment essential to improving patient outcomes.[4]

One of the major challenges in BSCC of the larynx is its propensity for submucosal extension, regional lymph node metastasis, and distant spread, even in early-stage disease. Unlike conventional SCC, which often presents with exophytic or ulcerative growth, BSCC tends to invade deeper tissues without significant surface involvement, making early detection difficult.

Histopathologically, BSCC shows distinctive basaloid features, including small, hyperchromatic nuclei, scant cytoplasm, high mitotic activity, and comedo-type necrosis.[5] Immunohistochemistry plays a crucial role in differentiating BSCC from other poorly differentiated neoplasms, such as neuroendocrine carcinoma and adenoid cystic carcinoma. Markers like p63 and CK5/6 confirm its squamous origin, while neuroendocrine markers (chromogranin, synaptophysin) help exclude neuroendocrine tumors.

The association between HPV and BSCC remains controversial. While HPV-positive oropharyngeal BSCCs have shown better prognosis due to their favorable response to therapy, laryngeal BSCCs are less frequently associated with HPV and often exhibit a more aggressive clinical course.[6] The poor prognosis of laryngeal BSCC is attributed to its higher metastatic potential, poor differentiation, and frequent late-stage presentation.

Treatment strategies for BSCC of the larynx generally follow protocols for SCC, including surgery, radiation, and chemotherapy.[7] However, due to its aggressive nature and higher recurrence rate, a multimodal approach is often required. Radical surgery with adjuvant chemoradiation is usually preferred in advanced cases, while organ-preserving approaches may be considered in selected patients with early-stage disease.[8]

Given its rarity, the BSCC of the larynx poses significant challenges in clinical practice. More case reports and studies are needed to establish standardized treatment protocols and identify potential molecular targets for therapy.[9] Early recognition, accurate histopathological diagnosis, and a multidisciplinary treatment approach remain the cornerstones for improving survival in patients with this aggressive malignancy.

CONCLUSION

In summary, BSCC is an uncommon, high-grade bimorphic variant of squamous cell carcinoma with a predilection for the head and neck region. Histopathologically, it needs to be differentiated from other tumors a basaloid component. Once the diagnosis of BSCC is made, the treatment should be appropriately planned considering its aggressive clinical course and high rate of metastasis.

Funding: No funding sources
Conflict of interest: None declared
Ethical approval: Not required

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Cite this article as: Seal S, Galagali BJR. Basaloid variant of squamous cell carcinoma of the larynx: a rare and aggressive subtype with subglottic extension. Int J Otorhinolaryngol Head Neck Surg 2026;12:438-41.