## **Case Report**

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# Verrucous carcinoma of the glottis and subglottis: a rare case report

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#### **ABSTRACT**

Verrucous carcinoma is a rare well differentiated squamous cell carcinoma with minimal metastatic potential. Its occurrence in the glottic and subglottic subsets of the larynx is another very rare entity. We highlight a case of an elderly male who was histopathologically diagnosed as verrucous carcinoma of the glottic and subglottic larynx. We shall discuss the clinical presentation, diagnosis, management, prognosis and postoperative follow up of the patient.

Keywords: Verrucous carcinoma, Larynx, Glottis, Subglottis

#### INTRODUCTION

Verrucous carcinoma is a squamous cell carcinoma variant which is well differentiated. It can arise from a variety of epithelial cells, the common sites being the oral cavity mucosa, larynx and nose. A rare neoplasm associated with long term smoking and alcohol abuse alone as well as synergistically. Among all primary laryngeal carcinomas, verrucous carcinomas account for around 1–3.9 % of cases. The human papilloma virus (HPV) is often implicated in its occurrence.

They are usually slow growing tumors commonly involving the glottic subset of the larynx. Men are more commonly predisposed, usually seen in the 5<sup>th</sup> and 6<sup>th</sup> decade of life. Although they are slow growing tumors, they have a tendency to become locally invasive and gradually invade and destroy the entire framework of the larynx.<sup>4</sup> Patients present with hoarseness, respiratory obstruction and occasionally difficulty in swallowing when the tumor is very large in size. Very rarely will an emergency tracheostomy be needed.<sup>2</sup> The objective of this case report is to bring to light, the rare occurrence of rare variant (Verrucous carcinoma) of squamous cell

carcinoma of the glottic and subglottic subsets of the larynx.

#### **CASE REPORT**

A 61 year old male, driver by occupation presented to our ENT outpatient department with history of hoarseness of voice and difficulty in breathing for the past 6 months, which had gradually progressed and worsened over the last one month. He gave history of significant weight loss, around 7 kilograms in the last 3 months. Patient was a chronic smoker, having up to 10 cigarettes per day for the last 40 years. On examination, patient had respiratory distress and inspiratory stridor. Indirect laryngoscopy revealed a proliferative growth involving the entire right true vocal cord, right false vocal cord extending upto the anterior commissure and involving the anterior 1/3<sup>rd</sup> of the left true vocal cord. Right hemi larynx was fixed, however the left vocal cord was mobile. The growth was seen to prolapse into the Rima Glottidis with extension into the subglottis. His glottic chink was less than 1 mm (Figure 1). There were no palpable cervical lymph nodes.

A clinical diagnosis of carcinoma of the glottis of the larynx with subglottic extension was made. Patient was immediately admitted and an emergency tracheostomy was performed under local anaesthesia, in order to relieve his stridor. He was later investigated by performing a contrast enhanced CT scan of his neck and thorax, to see for the extent of the growth and to look for any nodal and lung metastasis, both of which were found to be absent. Patient was posted for direct laryngoscopy under general anaesthesia so as to obtain a biopsy of the growth, which was sent for histopathological examination and revealed verrucous carcinoma of the larynx. Patient was counseled and subsequently posted for total laryngectomy under general anaesthesia (Figure 1). The entire specimen was sent for histopathological analysis.

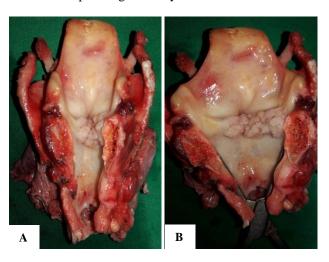


Figure 1 (A and B): Clinical photographs of the total laryngectomy specimen, showing the proliferative growth involving the glottis and subglottis of the larynx.

Patient recovered well post operatively with no complications of the procedure (Figure 2). Sections from the histopathology revealed verrucous carcinoma arising from the glottis and subglottis, reaching upto the sub epithelial tissue (Figure 3). Resection margins were free.

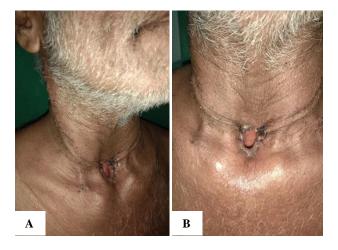


Figure 2: Clinical photographs of our patient post total laryngectomy with a healthy stoma.

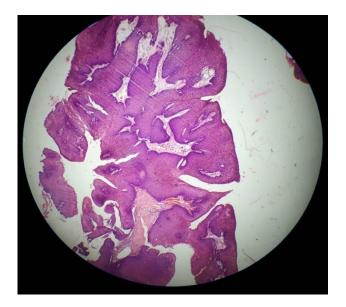


Figure 3: Photomicrograph showing verrucous carcinoma, arising from the glottis and subglottis of the larynx, reaching upto the sub epithelial tissue (H & E, 100X).

Patient was followed up for over a year now and is recurrence free. Overall prognosis was good. Patients consent has been taken to publish this case report.

#### **DISCUSSION**

Verrucous carcinoma is an extremely uncommon, locally aggressive, clinically exophytic, low grade, slow growing, well differentiated squamous cell carcinoma with minimal metastatic potential. It occurs in the oral cavity, larynx, anorectal region, plantar surface of the foot and less commonly other cutaneous sites. The involvement of the glottic and subglottic subsets of the larynx is very rare. Verrucous carcinoma was 1st described by Ackerman in 1948 and was considered to be a clinicopathological variant of squamous cell carcinoma.<sup>5</sup> It was also called carcinoma cuniculatum, owing to its characteristic crypt like spaces on histology.<sup>6</sup> The pathogenesis involves human papilloma virus (HPV) infection, chemical carcinogenesis induced by smoking and tobacco chewing, alcohol consumption and beetel nut chewing and chronic inflammation.<sup>8</sup> Verrucous carcinoma occurs more commonly in Caucasian whites and middle aged males in the 5th decade of life.9

Laryngeal lesions usually present as a bulky exophytic lesion with a papillomatous appearance. <sup>10,11</sup>

Differential diagnosis includes giant verruca vulgaris, keratoacanthoma, pyoderma vegetans. Verrucous carcinoma may resemble a verruca superficially, with hyperkeratosis, Para keratosis, acanthosis, papillomatosis and granular cell layer vacuolization. A characteristic feature is the blunt projections of well differentiated epithelium surrounded by edematous stroma and chronic inflammatory cells that extend into the dermis. In

laryngeal verrucous carcinomas, the treatment of choice is surgery in the form of a total laryngectomy. Other modalities include cryosurgery and radiation therapy. The latter is rarely used owing to its potential association with transformation to high grade squamous cancer. <sup>12</sup> Only 50 percent of verrucous carcinoma respond primarily to radiation even when small. Properly performed surgery (partial/subtotal/ total laryngectomy) has a very high cure rate. Batsaki surveyed the literature and found 90 patients treated with radiation, of those treated, 71 percent had lesions that persisted or returned. In contrast with 103 treated surgically only seven (6.8%) had recurrences.

Local verrucous cancer recurrence following definitive management is not uncommon, having recurrence rates ranging from 6–40%. <sup>13</sup>

#### **CONCLUSION**

Through this case report we highlight the rare occurrence of verrucous carcinoma of the glottis and subglottis of the larynx. Histological diagnosis and surgical management in the form of a laryngectomy is of utmost importance, decreasing recurrence rates and improving cure rates and survival.

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