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Case Report

Granular cell tumor of the larynx – an unusual cause of the common symptoms

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ABSTRACT

Granular cell tumors (GCTs), or Abrikossoff's tumors, are rare neoplasms of neural origin, likely derived from Schwann cells. They typically affect the head and neck region, most commonly the tongue. Laryngeal involvement is uncommon, comprising 6–10% of cases. While most GCTs are benign, 1–2% may undergo malignant transformation. A 55-year-old female presented with hoarseness of voice for six months. Videolaryngoscopy revealed a single, sessile, pale pinkish mass with a smooth surface on the posterior half of the right true vocal cord, extending upto the right two-thirds of the posterior commissure. Vocal cords were mobile bilaterally. Laryngeal microsurgery was performed under general anesthesia. The mass extended inferiorly into the vocal process of the arytenoid, which was also excised. Histopathological examination confirmed a granular cell tumor, showing characteristic features including pseudoepitheliomatous hyperplasia of the overlying epithelium. Though rare, laryngeal granular cell tumors should be considered in patients presenting with glottic lesions and voice changes. Their histologic appearance can mimic squamous cell carcinoma, posing a diagnostic challenge. Awareness of this entity among otolaryngologists and pathologists is crucial for accurate diagnosis and appropriate management.

Keywords: Granular cell tumor, Larynx, Schwann cells, Hoarseness, Histopathology

INTRODUCTION

Granular cell tumor (GCT), also known as Abrikossoff's tumor, is an uncommon soft tissue neoplasm that can originate in virtually any region of the body. Historically misclassified as myogenic tumors (myoblastomas), these lesions were once described using various terminologies such as granular cell myoblastoma, myoblastic tumor, embryonal rhabdomyoblastoma, granular cell neuroma, and granular cell schwannoma.

However, the World Health Organization (WHO) currently designates "granular cell tumor" as the standard nomenclature, with accumulating evidence supporting their derivation from Schwann cells based on immunohistochemical and ultrastructural findings.[1]

Approximately 50% of GCTs are localized to the head and neck region, with the tongue being the most frequently involved site. Laryngeal involvement is notably rare, comprising only 3–10% of reported cases. These tumors are predominantly benign, though malignant transformation has been reported in 1–2% of cases.[2]

The clinical significance of laryngeal GCT lies in its potential to mimic more common laryngeal pathologies both clinically and histologically, particularly squamous cell carcinoma due to associated pseudoepitheliomatous hyperplasia.[4] The current case report describes an unusual presentation of laryngeal GCT in a middle-aged female, underscoring the necessity for histopathological confirmation in cases of persistent dysphonia.

CASE REPORT

A 55-year-old female presented with a six-month history of progressive hoarseness of voice, with no associated history of dyspnea, dysphagia, odynophagia, or

constitutional symptoms. There was no relevant past medical or familial history.

Indirect laryngoscopic and videolaryngoscopic assessment revealed a solitary, sessile, pale pink mass with a smooth surface and irregular margins. The mass was localized to the posterior third of the right true vocal cord, extending into the posterior half of the posterior commissure. Vocal cord mobility was preserved bilaterally. The patient underwent direct laryngoscopy with microlaryngeal excision under general anesthesia. Intraoperatively, a 1×1 cm sessile mass with a smooth surface and firm consistency was noted in the posterior third of the right true vocal cord, extending into the posterior three-fourths of the posterior commissure (Figure 1).

The lesion was excised in toto from its base. Further dissection revealed extension into the vocal process of the arytenoid cartilage, which was partially resected (Figure 2). The specimen was submitted for histopathological examination.

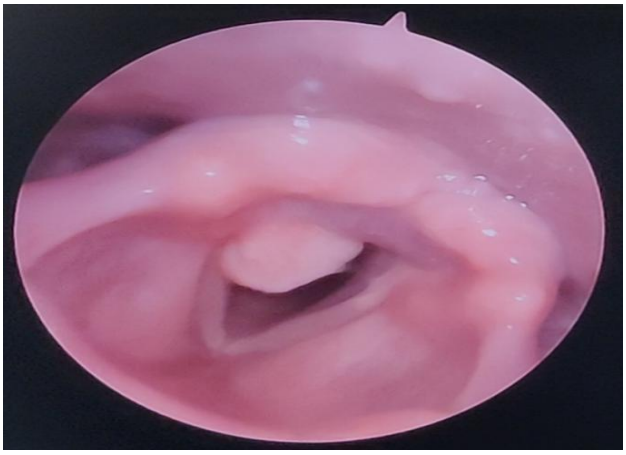

Figure 1: Single, smooth surface, sessile, pale pinkish mass seen occupying the posterior half of right true vocal cord extending up to right 2/3rd of the posterior commissure.

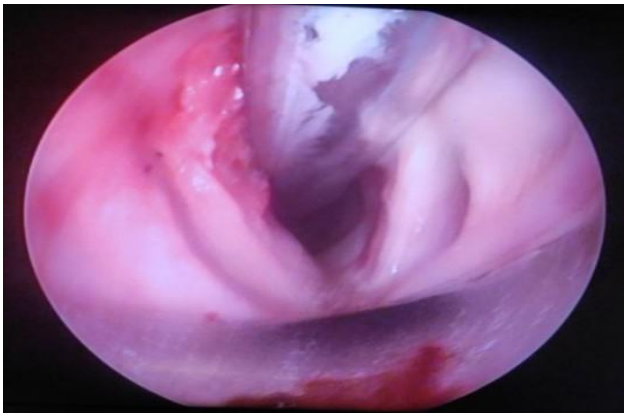

Figure 2: The mass was excised from the base and it was seen extending inferiorly into the vocal process of arytenoid, which was excised.

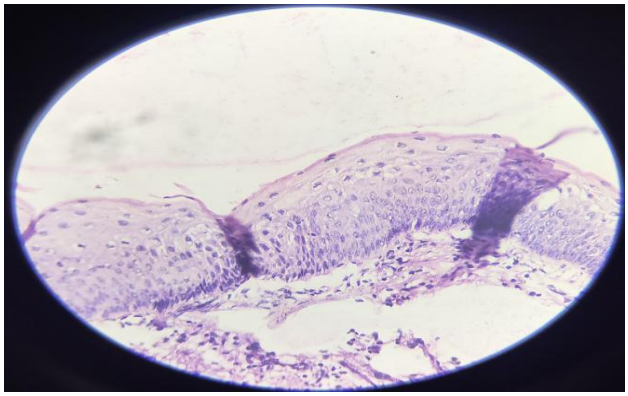

Figure 3: HPE on high power shows laryngeal mucosa lined by stratified squamous epithelium.

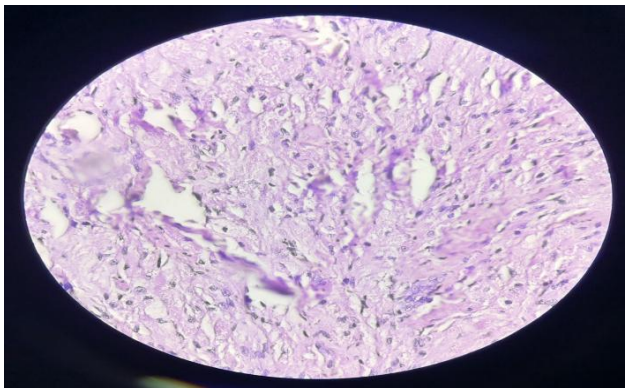

Figure 4: HPE on low power-subepithelium shows diffuse infiltration by sheets of round to polygonal cells with abundant eosinophils and cytoplasm with central rounded nuclei.

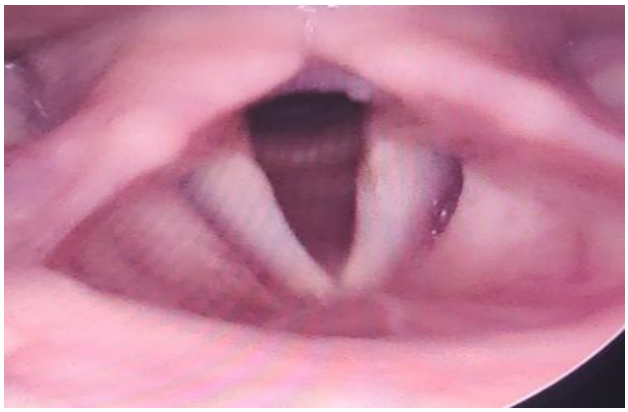

Figure 5: After 1-year follow up, patient had no recurrence.

The postoperative period was uneventful. The patient was advised complete voice rest for seven days and was counseled regarding vocal hygiene. By the fifteenth postoperative day, significant improvement in vocal quality was observed, and the patient was initiated on structured speech therapy. Histopathological examination revealed laryngeal mucosa lined by stratified squamous epithelium with underlying subepithelial proliferation of

polygonal to round neoplastic cells exhibiting abundant eosinophilic granular cytoplasm and centrally placed nuclei (Figures 3 and 4). There was no evidence of necrosis, nuclear atypia, or mitotic activity. Surgical margins were free of tumor infiltration. These findings were diagnostic of a benign granular cell tumor.

At one-month postoperative follow-up, endoscopic evaluation demonstrated complete mucosal re-epithelialization with satisfactory glottic closure. At one-year follow-up, the patient remained asymptomatic with no evidence of recurrence (Figure 5).

DISCUSSION

GCTs were initially described in 1926. Though originally believed to have a muscle-based (myogenic) origin, this theory has since been dismissed due to the presence of GCTs in non-muscular regions and the lack of myoglobin within the tumour cells. Current understanding supports a neuroectodermal origin.[1]

These benign tumours commonly arise in the head and neck region, but fewer than 10% are found in the larynx. They can occur in both children and adults, with a higher incidence in females.[2]

In the larynx, GCTs are typically located in the submucosa and present as pale lesions on the vocal folds (Figure 1). They are most often seen in the posterior glottis or subglottic area. Patients frequently present with hoarseness, though symptoms may also include dysphagia or a sensation of something in the throat (globus pharyngeus).[3]

Histologically, GCTs may mimic squamous cell carcinoma due to pseudoepitheliomatous hyperplasia and occasional mitotic figures. However, the absence of nuclear atypia and pleomorphism, along with the presence of characteristic granular cells, helps distinguish them.[4] These cells are polygonal or elongated, contain eosinophilic granules, and have small, uniform nuclei with minimal mitotic activity.[5] Diagnosis is further supported by S-100 protein positivity and PAS staining, which highlights the intracellular lysosomes.[6]

Surgical excision is the treatment of choice. When resected with clear margins, recurrence is rare (2–3%). However, incomplete excision increases the recurrence risk to approximately 21%. CO_2 laser excision is effective for achieving negative margins.[7]

Although malignant transformation is rare-occurring in about 1–2% of all GCTs. only one case of malignancy involving the larynx has been reported. Long-term monitoring is advised due to the tumour's potential for recurrence and slow progression. Annual endoscopic evaluations are usually sufficient.[2]

In our department, we perform routine follow-ups for up to 14 months after surgery using videolaryngoscopy to check for recurrence. Despite their rarity and typically benign behaviour, laryngeal GCTs should be well-recognized by otolaryngologists to avoid misdiagnosis and ensure appropriate treatment.

CONCLUSION

Laryngeal GCTs are rare, benign lesions that can be mistaken for malignancy. Correct histological identification is crucial for diagnosis. Complete surgical removal typically prevents recurrence, but long-term follow-up remains important to monitor for any regrowth or rare malignant transformation.

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