

## Case Report

# Extremely rare case of retropharyngeal space benign plexiform schwannoma - Excised through Smith-Robinson Approach

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## ABSTRACT

**Background:** Approximately 25–45% of schwannomas are typically slow-growing, encapsulated, and noninvasive tumors that occur in the head-and-neck region where they rarely involve the retropharyngeal space. Here, we report deep-seated benign plexiform schwannoma located in the retropharyngeal C2-C5 region excised utilizing the Smith-Robinson approach.

**Case Description:** A 30-year-old male presented with dysphagia and impaired phonation attributed to an MR documented C2-C5 retropharyngeal schwannomas. On examination, the lesion was soft, deep seated, and extended more toward the right side of the neck. Utilizing a right-sided Smith-Robinson's approach, it was successfully removed. The histopathology confirmed the diagnosis of a plexiform schwannoma.

**Conclusion:** Retropharyngeal benign plexiform schwannomas are rare causes of dysphagia/impaired phonation in the cervical spine. MR studies best document the size and extent of these tumors which may be readily resected utilizing a Smith-Robinson approach.

**Keywords:** Benign plexiform schwannoma, Dysphagia, Dysphonia, Retropharyngeal space, Smith-Robinson's approach

## INTRODUCTION

Approximately 25–45% of schwannomas are found in the head-and-neck region, but rarely involve the retropharyngeal space.<sup>[2,4,7]</sup> Here, we present a 30-year-old male with a MR documented C2-C5 deep-seated benign plexiform retropharyngeal schwannoma successfully resected utilizing the Smith-Robinson approach.

## CASE PRESENTATION

A 30-year-old male was admitted with a 1-year history of feeling a “lump in the throat,” accompanied by impaired phonation, snoring, and increasing difficulty swallowing. On examination, a deep soft-tissue swelling right-sided swelling could be palpated. While plain

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X-rays showed scalloping of the C5 vertebral body, magnetic resonance imaging (MRI) demonstrated a large lobulated retropharyngeal mass (7.5 cm craniocaudal  $\times$  4.8 cm transverse 4.8 cm  $\times$  3.1 cm AP) compressing the upper airway (i.e., oropharynx and hypopharynx) [Figures 1 and 2]. The lesion was hypointense on T1- and hyperintense on T2-weighted images [Figures 3 and 4]. Utilizing a routine right-sided Smith-Robinson approach, the C2 to C5 lesion was routinely excised [Figures 5 and 6]. Histologically, the tumor showed nodular plexiform fragments, bland spindle cells with nuclear palisading and verocay bodies, and all diagnostic for a benign plexiform schwannoma [Figures 7 and 8]. Postoperatively, the patient was neurologically intact.

## DISCUSSION

Retropharyngeal schwannomas are exceptionally rare. Raimondo *et al.* in 2015 reported a posterior pharyngeal wall

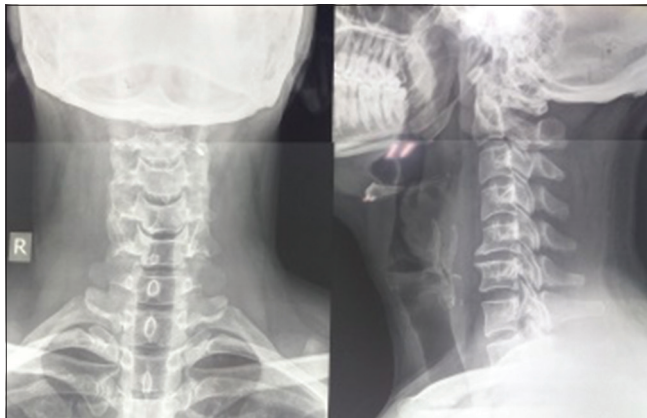
plexiform schwannomas.<sup>[10]</sup> Ijichi *et al.* in 2018 reported a plexiform schwannoma involving the carotid canal.<sup>[6]</sup>

## Diagnostic studies

The contrast-enhanced CT scans and MRI scans readily established the diagnosis of the retropharyngeal schwannoma. On enhanced MRI, these lesions are best demonstrated as well capsulated tumors.<sup>[7,8]</sup>

## Surgery

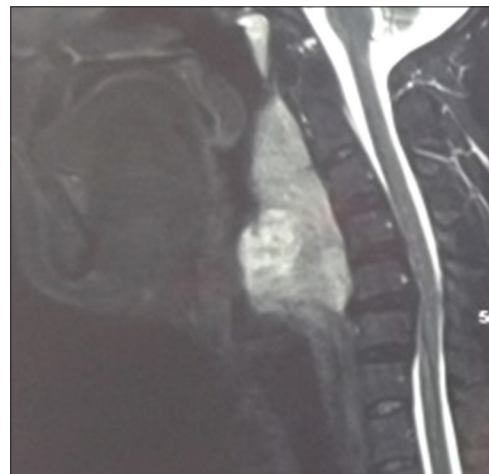
Gross total surgical excision is the treatment of choice for schwannomas. Observation or incomplete tumor excision can lead to malignant transformation.<sup>[9]</sup> With retropharyngeal lesions, the goal of surgery is to resolve dysphagia, snoring, and the “foreign body sensation in the



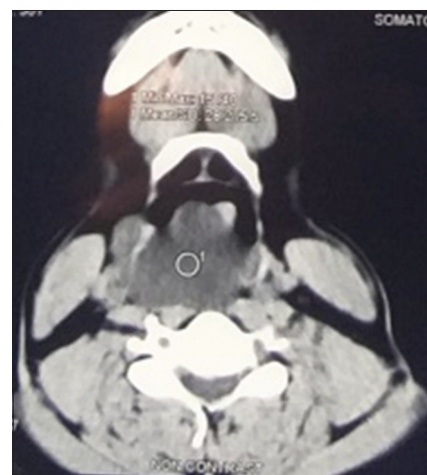
**Figure 1:** Preoperative X-ray of cervical spine (anteroposterior and lateral): X-ray suggestive of scalloping of vertebral body of C5.



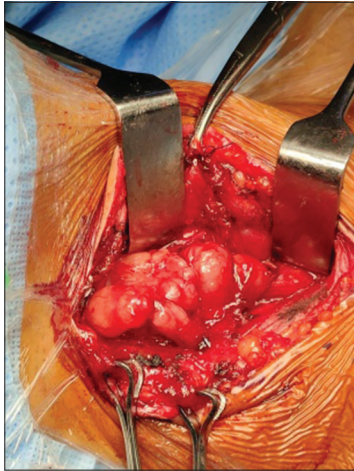
**Figure 2:** Contrast magnetic resonance imaging scan of cervical spine: a large mass arising in the retropharyngeal space with bright signal intensity.



**Figure 3:** Magnetic resonance imaging scan of cervical spine (STIR image): heterogeneous mass arising in the retropharyngeal space with lobulated margins.



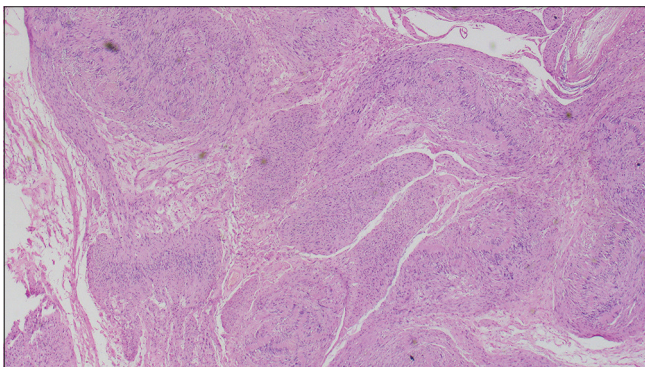
**Figure 4:** Magnetic resonance imaging scan of cervical spine (axial cut): severe narrowing of oropharynx and hypopharynx.



**Figure 5:** Intraoperative examination: intraoperative examination shows a large bulging plurilobulated mass with central location and remarkable reduction of the oropharyngeal space with the showing gray-white firm appearance.

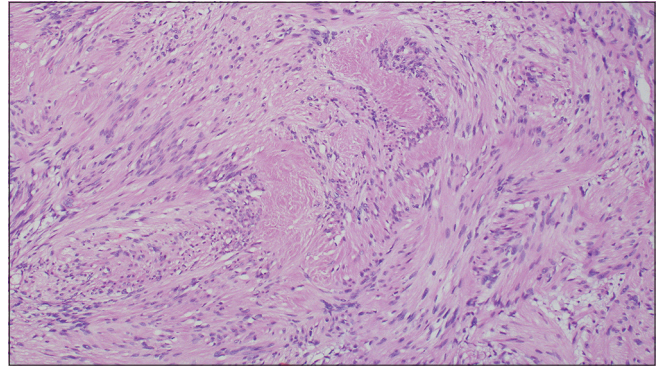


**Figure 6:** Intraoperative examination: complete surgical excision of mass before wound closure with drain *in situ*.



**Figure 7:** Histopathology slide: the tumor shows plexiform multinodular appearance with bland spindle cells.

throat.” Here, the tumor extended from C2-C5 abutting the right carotid sheath. Utilizing the classical anterior cervical



**Figure 8:** Histopathology slide: characteristic nuclear palisading verocay bodies are seen.

Smith-Robinson’s approach, the lesion was totally excised. Other authors have employed transcervical and/or transoral approaches for these lesions, although the transcervical technique poses risks damaging cranial nerves IX, X, and XII and major vascular structures.<sup>[5]</sup>

### Outcomes

Bozza *et al.* and Gallo *et al.* noted good prognoses associated with the gross total resection of encapsulated schwannomas. Only rarely do these lesions recur or undergo malignant transformation.<sup>[1,3]</sup>

### CONCLUSION

Retropharyngeal benign plexiform schwannomas are rare, but can be readily diagnosed utilizing contrasted enhanced MR scans. The optimal surgical choice for these lesions is gross total excision that was readily accomplished in this case for the C2-C5 tumor utilizing an anterior cervical Smith-Robinson approach.

### Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent.

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Nil.

### Conflicts of interest

There are no conflicts of interest.

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