

# An Unusual Presentation of a Primary Parapharyngeal Space Warthin's Tumour

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## Abstract

Warthin's tumours of the deep lobe of the parotid gland can present as a parapharyngeal space swelling. This occasionally makes their diagnosis a somewhat significant challenge. We present a rare case of a primary parapharyngeal Warthin's tumour which presented unusually with a failure of Continuous Positive Airways Pressure (CPAP) therapy due to a choking sensation and excessive saliva production. Examination revealed the cause for the symptoms was due to a large left-sided oropharyngeal swelling, causing displacement of the tonsil and uvula deviation. Computed Tomography (CT) and Magnetic Resonance Imaging (MRI) revealed a parapharyngeal space tumour, separate to the deep lobe of the parotid gland and histology found this to be a Warthin's tumour. This case is the first noted where this is a primary tumour, not connected to the parotid gland. Additionally, this case highlights the importance of a thorough oral cavity and oropharyngeal examination of patients presenting with Obstructive sleep apnoea, prior to commencement of CPAP treatment.

## Background

Parapharyngeal tumours are rare and prove difficult to diagnose without formal histology. They usually present insidiously with a cervical or oropharyngeal mass but can present with dysphagia, dyspnoea or sleep apnoea symptoms. Oropharyngeal swellings can present acutely, usually due to an infective cause or with a more chronic course. The acute swellings are usually due to either tonsillitis or a peritonsillar abscess (quinsy) but occasionally, deeper neck space infections such as parapharyngeal abscesses can present with oropharyngeal mass.

More chronic presentations of oropharyngeal masses are either due to tonsillar pathology or tumours within the parapharyngeal space. Tonsillar malignancies such as tonsil squamous cell carcinoma (SCC) or lymphoma can present with oropharyngeal masses. However, they are usually associated red flag symptoms with the suspicion of SCC; in particular weight loss, dysphagia, odynophagia and referred otalgia. With lymphoma, the mass is often associated with B symptoms (malaise, night sweats and weight loss).

Oral cavity and oropharyngeal assessment should be part of the diagnostic work-up for patients presenting with symptoms suggestive of sleep apnoea. Surgical intervention is only offered if medical treatment with CPAP has failed and therefore it is important that respiratory physicians and respiratory nurse specialists are aware for the potential of parapharyngeal space masses to cause sleep apnoea symptoms and have an understanding of how to examine for this.

## Case Report

A 72 year old male with a background history of Ulcerative Colitis and Obstructive Sleep Apnoea was referred by the respiratory team for an Otolaryngology review due to a choking sensation and excessive mucus when using his CPAP machine. His main issue was with the sensation of excess saliva and there was no associated odynophagia or dysphagia and no other red flag symptoms such as weight loss, referred otalgia or dysphonia.

Clinical examination revealed a large left oropharyngeal mass, causing deviation of the uvula with no associated trismus (Figure 1) and no other oral or oropharyngeal abnormalities. Neck examination revealed no palpable parotid masses or associated cervical lymphadenopathy.

Flexible nasoendoscopy, apart from noting the oropharyngeal swelling, was otherwise unremarkable. Computed tomography of the neck revealed a 43 × 34 mm parapharyngeal space tumour with a well-defined outline (Figure 2). The surrounding fat planes were preserved and the lesion was located anterior to the left carotid sheath extending into the left tonsillar fossa.

A fine needle aspiration (FNA) of the mass was undertaken intraoral. The results of this showed cystic fluid only. Unfortunately, the patient developed some swelling after the needle aspirate and was admitted for monitoring.

A subsequent Magnetic Resonance Imaging scan (MRI) was undertaken during this admission, which suggested a mass with a cystic or necrotic centre with an unknown aetiology (Figure 3). Radiologically this tumour was distinct but very close to the deep lobe of the parotid gland.

## Treatment

The patient underwent a trans-cervical excision of the tumour under general anaesthetic which removed the mass completely (Figure 4). This was complicated by a return to theatre the following day due to haematoma formation but no further action was required.

Histology confirmed this to be an encapsulated benign oncocytic tumour of Warthin's type with no malignant cells. No salivary gland component was identified.

## Outcome and Follow-Up

Post-operatively the patient is no longer symptomatic and sleep studies have shown a resolution of the apnoeic episodes. The patient's CPAP therapy has been discontinued. The patient consented to any information/media to be used solely for educational purposes.

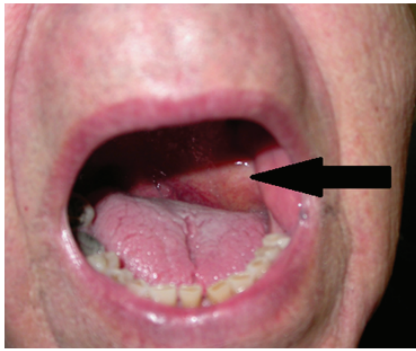


Figure 1: Intra-oral picture of left oropharyngeal mass (arrow).

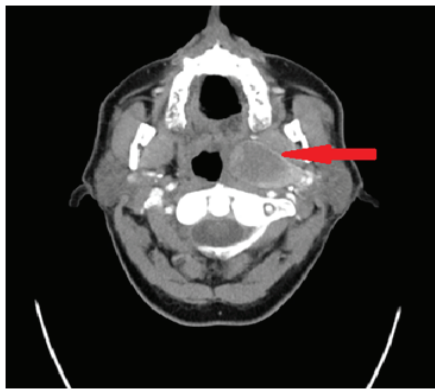


Figure 2: CT axial view imaging of parapharyngeal mass (arrow).

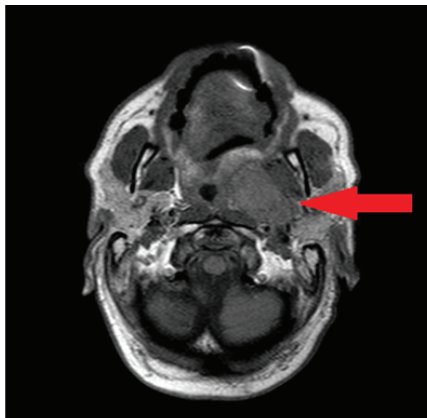


Figure 3: MRI axial imaging of parapharyngeal tumour adjacent to left parotid gland (arrow).



Figure 4: Intraoperative picture of excised tumour.

## Discussion

The parapharyngeal space is a component of the deep neck spaces and can be visualised as an inverted pyramid shape. Hypothetically, the base is formed by the skull base, its apex the greater cornu of the hyoid bone and laterally it is bordered by the deep lobe of the parotid gland. The parapharyngeal space contains mainly fat but also includes vessels and nerves; including the ascending pharyngeal artery, the internal maxillary artery and a branch of the trigeminal nerve. The incidence of parapharyngeal tumours is rare, making up only 0.5% of all head and neck tumours [1]. The majority of parapharyngeal tumours are benign and slow-growing [2]. Three commonest types of parapharyngeal tumour include salivary tumours usually arising from the deep lobe of the parotid gland, neurogenic tumours and paragangliomas [3]. Statistically, these tumours are usually of salivary gland origin and histologically, are described as pleomorphic adenomas [4-6].

Warthin's tumor, also known as papillary cystadenoma lymphomatosum, makes up 14-30% of all parotid tumors [7]. It ranks second to pleomorphic adenoma in the incidence of benign neoplasms of the parotid gland [8]. In our case, the histology determined a primary Warthin's tumour within the pre-styloid parapharyngeal compartment, distinct and separate to the deep lobe of the parotid. It is important to note that some cases of parapharyngeal space Warthin's tumour are reported in the literature [2,9,10], nevertheless they often show an extension of deep lobe parotid tumours.

Radiologically, Computed Tomography (CT) scan and Magnetic Resonance Imaging (MRI) are invaluable tools to differentiate between pre-styloid and post-styloid tumours. Surgical excision options can be considered after reviewing imaging for formal histology and symptomatic relief. The parotid or extra-parotid nature of parapharyngeal masses can be distinguished by identifying a fat plane between the mass and the parotid gland [2] and this can help guide differential diagnosis. Histopathology remains the gold standard for formal diagnosis [11], however due to the difficult surgical approach of tumours in this area ultrasound guided FNA along with other radiological assessment can aid with this.

Surgical excision options can be considered after reviewing imaging for formal histology and symptomatic relief. Preoperatively, radiological assessment can provide information on the size, extent, origin and probable histology of a parapharyngeal space tumour and using this information, the surgeon can then determine the best surgical approach for complete and safe tumour excision [12]. Surgical techniques include transoral, transcervical, transparotid, or transpharyngeal approach with a mandibular split. Although the majority of tumours can be managed with a transcervical or transparotid approach, reserving the mandibular swing for extremely large and difficult tumours only [13].

In patients presenting with symptoms suggestive of Obstructive Sleep Apnoea, it is essential to rule out any physical cause and perform a comprehensive ear, nose and throat examination [1] before commencement of conservative, dietary or CPAP therapy. A similar case involving a parapharyngeal lipoma presented with OSA symptoms. The case report highlights that anatomical structural obstructive causes must be ruled out as part of the diagnostic work up in sleep apnoea patients.

## Conclusions

Parapharyngeal tumours are rare and present a diagnostic challenge, requiring histology for formal diagnosis. Radiological imaging to identify whether fat planes are preserved can distinguish between parotid and extra-parotid parapharyngeal masses aiding diagnosis. Parapharyngeal masses can present with sleep apnoea symptoms and oropharyngeal masses should be ruled out as part of the respiratory assessment prior to CPAP.

### Conflict of Interest

The authors declare no conflicting interest.

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