



MANAGEMENT OF A HUGE PARAPHARYNGEAL MASS : A SURGICAL NOVELTY

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ABSTRACT Parapharyngeal space (PPS) tumors are very uncommon. Though majority of these tumors are of benign origin, the most common among them is a pleomorphic adenoma. Surgical removal is mainstay for the treatment of these tumors for which a strategic preoperative evaluation of each patient and knowledge of different surgical approaches to PPS are essential. Here we report a rare but typical case of a 35 years old female presented to OPD with a mass in right the parapharyngeal space. The mass was excised successfully using mandibular swing approach and the post operative histopathology report suggested it to be "pleomorphic adenoma".

KEYWORDS : parapharyngeal mass, pleomorphic adenoma, submandibular swing surgery.

INTRODUCTION

Parapharyngeal space tumors account for only 0.5% of all head and neck neoplasms and 80% of these tumors are benign.[1-3] The most common tumor found is pleomorphic adenoma(63%), also known as benign mixed tumor followed by Schwannoma and Paraganglioma. [4] Pleomorphic adenoma may arise from deep lobe of parotid and enter into parapharyngeal space or can also arise from aberrant salivary glands. [5]

Symptoms are usually minimal or insignificant, In fact the only sign in most cases is asymptomatic swelling, that slowly grows into the parapharyngeal space. As tumors located in the parapharyngeal space are relatively unusual, experience in diagnosis and treatment is very limited. Management of these tumors is challenging due to its anatomical location and its proximity to vital neurovascular structures within the PPS. [6]

Due to its rarity and intricate location we are reporting a case of huge parapharyngeal pleomorphic adenoma for which provisional diagnosis was based on computed tomography scan and the definitive diagnosis was achieved by excision biopsy. Our management included successful preoperative planning which enabled one step total removal of the tumor with rapid recovery.

CASE REPORT

A 35 years old, HbsAg positive female presented to the ENT department of MGM Medical college and Hospital with complaints of difficulty in swallowing since 2 years with change in quality of voice, which did not relieve on medications. This was associated with breathlessness on supine position. There was no history of fever or weight loss.

On intraoral examination, a right sided swelling in parapharyngeal region was seen crossing the midline contralaterally. It was soft to firm in consistency with smooth over lying mucosa and without inflammation. There was no evidence of any other extraoral pathology. On performing video laryngoscopy by the use of 70degree endoscope, a right sided mass was seen to be indenting the lateral pharyngeal wall and compromising airway with resultant narrowing of oropharynx. No extension was observed in nasopharynx.

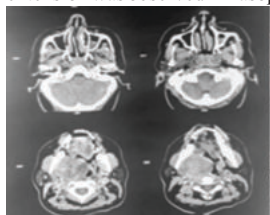


Fig 1: CECT neck axial view

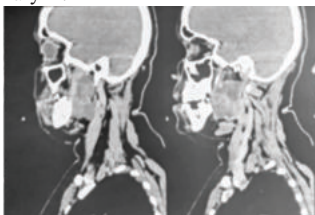


Fig 2: CECT neck sagittal view

Contrast enhanced computed tomography showed a well encapsulated solid cystic mass lesion of size 5.8x3.5cm is noted in right parapharyngeal space with few wall calcifications. mild enhancement of solid component was seen on post contrast images.

After obtaining the patient's informed consent, surgery was planned to approach the parapharyngeal mass transcervically with mandibulotomy (mandibular swing approach) in order to achieve radical excision of the mass.

A transcervical skin incision was taken at the level of hyoid bone, 2 cms below angle of mandible in a major skin crease and extended till midline lower lip for mandibulotomy approach. Incision extended intraorally along the inferior labial mucosa to the mandibular mucoperiosteum. After exposure of the Parasymphysis, body, and ramus of the mandible mandibular swing access osteotomy was planned. The osteotomy cuts were planned by preserving the inferior alveolar neurovascular bundle and the medial surface of the mandible was exposed to visualize parapharyngeal structures (Fig.3). The mass was visualized after further dissection and it was completely excised in toto by blunt dissection. Care was taken not to injure any neurovascular structures of parapharyngeal space. The swung mandible was repositioned after doing intermaxillary fixation and fixation was done by using miniplates (Fig.5) The drain was kept in parapharyngeal space which was removed after 48 hours. Post operatively patient was observed in ICU for a day. The patient was discharged after 7 days.



Fig 3: showing tumor mass after mandibular swing



Fig 4: showing encapsulated mass after removal from parapharyngeal space



Fig 5: fixation of osteotomy with miniplates



Fig 6: excised specimen of 60x30x40 mm

The measurement of the excised mass was 60x40x30 mm in size with congested and bosselated surface (Fig. 6)

On microscopic finding solid areas were seen ill-defined, myxoid, glistening greyish white and firm. The cystic areas contain mucinous material along with few hemorrhagic areas. This features are suggestive of pleomorphic adenoma (fig 7)

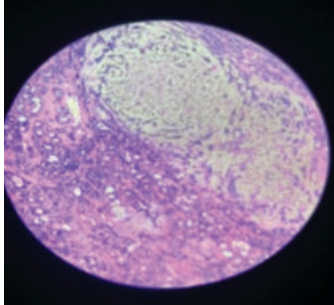


Fig 7: microscopic image of specimen in 40x



Fig 8: post op picture of 2nd follow up visit

DISCUSSION

The parapharyngeal space (PPS) is an inverted cone-shaped fascial space of the suprahyoid neck extending from base of the skull to the hyoid bone. It is further divided into pre styloid and post styloid compartments by styloid process, and its attached muscles and fascia[7]. The space becomes clinically important due to a variety of pathological occurrences in it. Tumors of the parapharyngeal space account for about 0.5% of all tumors of head and neck[6]. Due to its lower incidence, these tumors are a rare entity for diagnosis. Various studies done on these tumors have suggested a plethora of clinical manifestations, examples of which are otalgia, neuralgia, cranial nerve deficit, trismus etc. The fact that our patient presented with difficulty in swallowing and without any other above mentioned symptoms makes our case unique. In other cases, a patient may present with obstructive symptoms due to mass effect of the tumor compressing the tonsillar and peritonsillar areas. However in our case, the symptoms progressed gradually, hence the patient presented later stage when the mass was visible in the oral cavity.

Being highly vascularized and containing important nerves, one can always expect involvement of these due to the tumor, but lack of this in our case points towards a more benign and slow growing nature which is in alignment with given literature suggesting that 80% of these tumors are benign.

Varghese et al suggested that pleomorphic adenoma can arise from displaced or aberrant salivary gland tissue within a lymph node in the parapharyngeal space.[5] This explains why maximum number of parapharyngeal tumors turn out to be pleomorphic adenomas as in our case.

As the dictum goes any swelling needs to be visualized first using radiological imaging followed by fine needle aspiration cytology(FNAC). In parapharyngeal space tumor the most common helpful imaging modality is computed tomography(CT). CT not only provides information about the exact location, size and relations of the tumors with great vessels of the neck but also depict the malignant and benign nature of the tumor. In our case a contrast enhanced computed tomography was performed for this patient which revealed a very clearly delineated tumor in right the parapharyngeal space without compression or invasion of the neurovascular bundle.

FNAC may or may not be performed depending upon the size and the localization of these lesion and their relationship with surrounding neurovascular bundle. Open neck or trans-oral biopsies should be avoided, since opening the tumor capsule may increase the risk of recurrence.

Surgery is the accepted and only treatment modality for parapharyngeal space tumors while approaches to the tumor may be different and based on variety of factors; The most common being the transcervical and trans-parotid approaches. The other approaches are the transoral and mandibulotomy with transcervical approach[8]. The transcervical approach alone is considered to have a very limited exposure to the parapharyngeal space and the trans-parotid approach is dreaded due to its involvement of the facial nerve which may get injured during the procedure. The transoral approach on the other hand

is limited for smaller sized benign tumors and biopsies.

In our case the approximate size of tumor was 5.8x3.5cm on the computed tomography which was considered very large tumor since the parapharyngeal space has very small volume. Such tumors require enhanced adequate exposure with good control over vascularity. The transcervical with mandibulotomy approach allows for all of these without handling any major bloodvessels and nerves and was opted for. A parapharyngeal space tumor can be removed in 3 ways: enucleation, wide margin resection and compartmental resection. Due to adequate exposure, clear margins and lesser vascularity, enucleation was considered as the best option.[9]

It is worthwhile to note that the blood loss during surgery was minimum which could only be achieved by a careful and discrete dissection technique with optimal knowledge of anatomy. The patient was Australia antigen positive which made the surgery high risk in terms of disease exposure to surgeon. Along with universal precaution and systematic surgical approach helped us to stay safe and provide the best for the patient.

CONCLUSION

Parapharyngeal space tumors can present as oral cavity masses; Most of which are benign in nature. Such Tumors which have clear delineated margins and proven to have benign nature over radiological investigations can be removed with appropriate preoperative evaluation and thorough anatomical knowledge of various surgical approaches to minimize patient morbidity. In tumors of large size requiring adequate exposure and vascular control a transcervical with mandibulotomy (mandibular swing surgery) approach should be considered for achieving one-step removal of tumor.

REFERENCES

- [1] Basaran B, Polat B, Unsaler S, Ulsan M, Aslan I, Hafiz G. Parapharyngeal space tumours: the efficiency of a transcervical approach without mandibulotomy through review of 44 cases. *Acta Otorhinolaryngologica Italica*. 2014;34:31016.
- [2] Fernandez MF, Fernandez JS, Costas AL, Sandoval JG, Lopez AS. Surgical treatment of benign parapharyngeal space tumours. Presentation of two clinical cases and revision of the literature. *Med Oral Patol Oral Cir Bucal*. 2008;13(1):E6164.
- [3] Hee WC, An YC, Sun HS, Hak YP, In SS. Pleomorphic adenoma mimicking malignant tumour in the parapharyngeal space in a patient with gastric carcinoma. *Nucl Med Mol Imaging*. 2010;44:143-45.
- [4] Yousem DM. *Head & Neck Imaging: Case Review Series*. 4th ed. Philadelphia: W.B. Saunders; 2015. pp. 354.
- [5] Varghese BT, Sebastian P, Abraham EK, Mathews A. Pleomorphic adenoma of minor salivary gland in the parapharyngeal space. *World Journal of Surgical Oncology*. 2003;1:2.
- [6] Lien KH, Young CK, Chin SC, Liao CT, Huang SF. Parapharyngeal space tumors: a serial case study. *Journal of International Medical Research*. 2019 Aug;47(8):4004-13.
- [7] Zheng Z, Jordan AC, Hackett AM, Chai RL. Pediatric desmoid fibromatosis of the parapharyngeal space: a case report and review of literature. *American Journal of Otolaryngology*. 2016 Jul 1;37(4):372-5.
- [8] Zhi K, Ren W, Zhou H, Wen Y, Zhang Y. Management of parapharyngeal space tumors. *Journal of Oral and Maxillofacial Surgery*. 2009 Jun 1;67(6):1239-44.
- [9] Metgudmath RB, Metgudmath AR, Malur PR, Metgudmath VV, Das AT. Surgical management of parapharyngeal space tumors: our experience. *Indian J Otolaryngol Head Neck Surg*. 2013 Jul;65(Suppl 1):64-8.