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CASE REPORT

TRANSMANDIBULAR APPROACH FOR EXCISION OF PARAPHARYNGEAL MASSES- A CASE REPORT

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ABSTRACT:

The extension of parapharyngeal space is from skull base to hyoid bone. It imparts a significant role for a variety of structures that it has and for the different type of the tumors it can contain. Benign tumors are nearly 80% with pleomorphic adenoma being the most common. It can form de novo or may appear from deep lobe of the parotid and extend from the stylomandibular tunnel to parapharyngeal space. Symptoms are not important but if not recognised early, continued spread may result in potential fatal complications. The aim is to show and discuss the ideal surgical approach for excision of parapharyngeal masses.

KEYWORDS: Pleomorphic adenoma ;transmandibular approach; mandibular swing.

INTRODUCTION

Parapharyngeal masses are rare, asymptomatic and often incidental findings on a routine oral examination, seen as a bulging of lateral pharyngeal wall. Most parapharyngeal masses are salivary gland tumors (40%-50%) followed by neurogenic tumours (17%-20%), paragangliomas (10-11%), and mixed lesions (branchial cleft cysts, lymphnodes,hematogenic lesions) [(1)]. Assessment of tumours in the parapharyngeal space is difficult due to the complex anatomical nature of the space making it inaccessible for clinical examination. These tumours usually have late presentation, with similar symptoms despite different pathological origin. [(2-4)] As difficulty involved to work for Parapharyngeal space, there are variety of approaches which are elaborated, including transcervical, the initial approach, described by Morfit in 1955 [(1,5)], transcervical-transparotid, commonly done, useful in PPS tumours appearing in the parotid deep lobe; transpalatal or transoral, elaborated by Ehrlich [(6)] and restricted to small non-vascular tumours; transmandibular, mandibular osteotomy being elaborated as a complement to the other techniques, in order to get better and augment way in to the Parapharyngeal space; Ariel et al. [(7)] were the initial to recommend opening the jaw to go in the Parapharyngeal space, many variation later elaborated [(8)]; and, finally, the orbitozygomatic path to the middle cranial fossa, elaborated by Fisch [(9)] in 1978, to give way to Parapharyngeal space tumours influencing the temporal bone / large tumours approacing skull base.

In this case mandibular swing approach was done to excise the parapharyngeal mass, this approach was used as it provides the best way to the parapharyngeal space for exciseion

in toto and hemostasis,while in transoral approach it gets very compact to excise large tumour in toto and achieving hemostasis becomes cumbersome.

CASE REPORT

A 52 year old male patient came to the Otorhinolaryngology OPD with some complaints of voice change since 1 year, it was after 6 months from the primary symptom the patient notices a swelling over the right cervical region, swelling was at first small gradually progressed in size. On clinical examination a non tender smooth non-pulsating firm swelling with inability to define the superior margin was noticed in the right cervical region.(Figure 3) The oral and pharyngeal examination showed smooth bulge of the right pharyngeal wall which was extensive to the palate. Examination of the cranial nerves and the lymph nodes did not show any neuropathies or significantly palpable lymph nodes .Patient has a history of beedi smoking and alcohol consumption for the last 25 years. MRI findings showed abnormal heterogeneously enhancing mass lesion involving the right parapharyngeal space, displacing the medial and lateral pterygoid muscles indenting the oro-pharynx and pharyngeal mucosal space causing moderate to severe narrowing of oro-pharyngeal airway. superio-laterally lesion was indenting the deep lobe of parotid gland with loss of fat planes (Figure 1 & 2). Suggestive of a neoplastic etiology. A full lab work up was done including 24 hour urinary vanillyl mandelic acid to rule out paragangliomas.

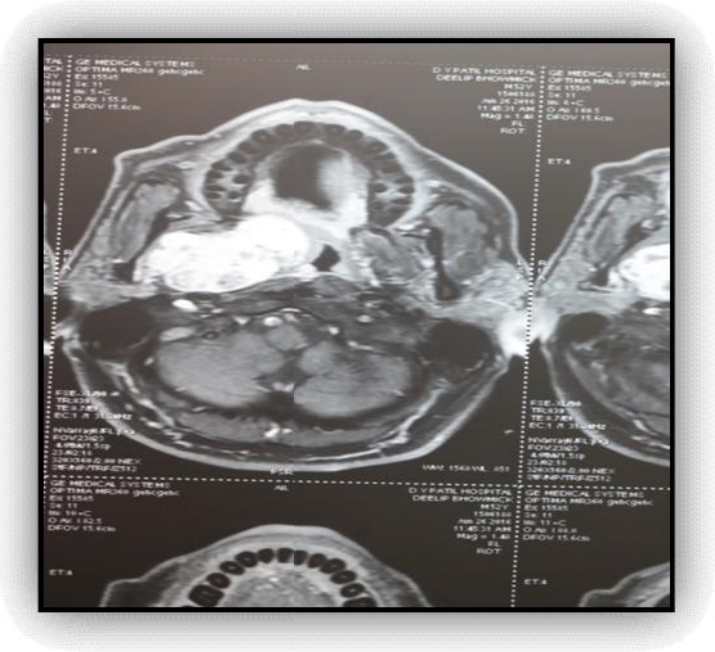

Fig 1- MR image of tumor.

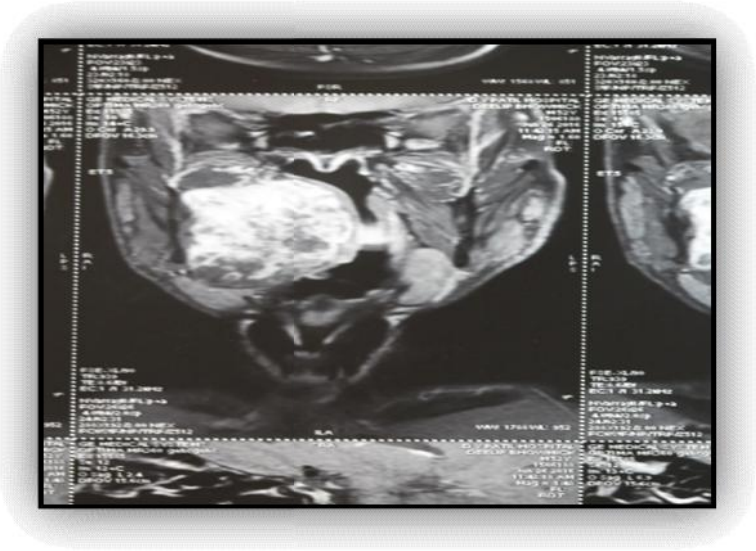

Fig 2- MR image of tumor in PPS

Fig 3- Bulging of tumor.

Fig 4- Removed tumor.

DISCUSSION

The prestyloid section is influenced by cancers with situation in the deep lobe of the parotid gland, showing greater than 50% of all parapharyngeal cancers. These tumors are benign and are also pleomorphic adenomas that form in the deep lobe of the gland or within polycentric modality in the two lobes, looking like hourglass. These tumors finishes in parapharyngeal space as constantly enhancing volume and the slow formation. They reach this seat for natural evolution since this space provides less resistance to their spread than others.

CT and MRI are important tools, which help in informing the spread of disease, the local extension and the type of tumour. MRI is superior to computed tomography in the diagnosis of parapharyngeal space tumours . In the case of pre-styloid tumours, if MR shows a fatty plane within the tumour and the parotid deep lobe, this would indicate that the tumour had divided from the lobe. [1, 10]. Open biopsy is not recommended, as it increases the risk to bleed, break of the capsule and, accordingly, the seed lesion [4]

In the near future, many patients might also benefit from new diagnostic methods as high resolution integrated PET/MRI with new tracers that enable "in vivo" aalaysis of these tumors at the level of molecule. [19]

The treatment of pleomorphic adenoma is definately surgical. In surgery of the PPS tumors, it must be taken care by the surgeon that damage/rupture of capsule of the pleomorphic adenoma not done.

A curvilinear skin incision taken from the mastoid tip extending 2 fingers breadth beneath the low lying border of the mandible to the submental area and curved at the midline to a lip splitting incision. Flap was elevated deep to the submandibular gland to avoid injury to the marginal mandibular nerve. All nerves and vessels were identified .The mandibular gingiva was incised in the midline and was elevated bilaterally. A median mandibulotomy was performed using a saw in a zigzag fashion. A paralingual mucosal incision was taken on the right side extending to the anterior tonsillar pillar and the soft palate.The muscles of the floor of mouth were sharply incised and the mandible was swung laterally giving the widest exposure to the parapharyngeal space.The mass was excised in toto along with the capsule, hemostasis was achieved with minimal difficulty due to good exposure of the vessels.

The paralingual incision was closed, the mandibulotomy was fixed using titanium miniplates and titanium miniscrews.

Usual PPS surgery mostly uses the transcervical and transparotid approach. Malone et al. and Hamza et al. [11, 12] explain the resection of PPS tumours by the transcervical approach only in 90-100% of cases. Hughes et al. [13] made available a series of 172 cases by the transcervical and transparotid approach in 94%, by mandibular osteotomy in merely 2% of resections. The transoral approach by Ehrlich [6] in 1950 is described for small, non-vascular tumours, as it offer reduced exposition and does not provide adequate control in the occasion of haemorrhage. Works made available by McElroth et al. [14] in 1963 explain the use of this approach along with ligature of the external carotid artery to eradicate PPS tumours in a work of 112 patients. More freshly, in 1989, Goodwin and Chandler [15] assesed this approach to give appropriate access to the PPS, as it gives direct approach to the PPS. It is very valuable to combine with other methods, as it provides the deepest part of the tumour to be exposed, allowing the removal of large tumour. Compared to transcervical excision of tumours, it provides a rate of post-operative

complication which is of lesser than 31% (Carrau et al. [16] 1990). We thereby consider that this approach is useful for small, extra-parotid and non-vascular tumour of the PPS, but is also essentially combined with other approaches for the full resection of large tumours of the PPS [17].

The mandibular osteotomy elaborated in the literature has given useful access to the PPS, being very essential for the complete excision of tumours and providing better control of the vascular structure. As the initial osteotomies were described by Ariel et al. [7], various variants [18] are described.

The success of PPS surgery depends on two things.

1.Correct recognition and coverage of to allow total removal and stop the chances of recurrence.

2.Very less functional and aesthetic fatality taking into account the chances of surgery in this space.

In our case the transmandibular approach provided a very good access to the tumor for its complete excision along with the capsule and also provided a wider access to the surgical field for achieving hemostasis.

CONCLUSION

Parapharyngeal tumors are occasional in the people and at first asymptomatic due to their unusual anatomical location.

Diagnosis depends on radiology, CT or MRI. The surgical method depends on the site and extent of the tumor.

Transmandibular approach gives the best contact of the surgical field to cut out the tumors in toto and to attain hemostasis.

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