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Case Report

Pleomorphic Adenoma of Parapharangeal Space in 37-Year-Old Male with Review of Literature

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Abstract

Parpharyngeal space tumors are rater uncommon entity; of these tumors majority are benign and arise from salivary glands. Surgery remains to be the mainstay of treatment with prior CT scan and or MRI scan (to delineate involvement of the adjacent structures like neurovascular, and skull base involvement). Needle biopsy is recommended beforehand to confirm the diagnosis. Radiotherapy is recommended additionally in malignant tumors. Here we present a case of pleomorphic adenoma presenting as left sided parapharyngeal mass in a 37-year old male patient (diagnosed incidentally 9 years ago) with review of current literature on parapharyngeal space tumors.

Keywords: Parapharyngeal space, pleomorphic adenoma

Introduction

Parapharyngeal space, a complex anatomical space is considered to be an inverted pyramid. The base of the pyramid is formed by the temporal bone and the apex is formed by the hyoid bone [1]. Parpharyngeal masses are quite rare in occurrence; they comprise of only 0.5% of all the different varieties of head and neck tumors [2].

Majority of the parapharyngeal masses are salivary gland tumors (comprising of 40-50% of the parapharyngeal lesions) and are located in the prestyloid region. Again the most common prestyloid parapharyngeal space lesion is pleomorphic adenoma; it accounts for 80-90% of the salivary tumors in the parapharyngeal space [2]. Differential diagnosis of paraphryngeal space masses include salivary gland tumors, vascular masses, and neurogenic masses [3-5]; majority of the parapharyngeal masses are benign in nature (87%) whereas only a small number of parapharyngeal masses (13%) are malignant in nature [3].

Management of parapharyngeal masses includes surgical interventions, observation, or radiotherapy [3-6]. Usually post-operative complications following excision of parapharyngeal masses are quite rare; however, if happens, these complications have significant negative impact on quality of life. Of all the post-operative complications following parapharyngeal mass excision, cranial nerve injury remains to be the most common one [4]; others include first bite syndrome, continuous leakage of cerebrospinal fluid, and Horner's syndrome [4].

Keeping in mind the risk of potential post-operative complications following surgery, whether surgery should be done or not and the choice of surgery depend upon the size of the tumor, the adjacent structures, chance of the tumor being malignant, associated comorbidities, and other symptoms [3,5].

Differential diagnosis in a particular patient also plays an important role in deciding if surgical excision of the mass should be done or not.

Here we present a case of left parapharyngeal mass in a 37-year-old male patient.

Case description

A 37 year old male patient reported to the out-patient

department with complaint of recent onset (for the last 6 months) decreased hearing in the left ear. The patient had a history of left parapharyngeal mass, diagnosed incidentally 9 years ago.

Clinical examination of the ears revealed otitis media with effusion (OME) in the left ear with no such pathology in the right ear. Weber test revealed lateralization of sound to the right ear whereas Rinne test revealed positive test result in left ear and negative test result in right ear.

Examination of nose revealed deviated nasal septum (DNS) to the right with inferior turbinate hypertrophy (ITH).

Throat examination revealed Left sided nasopharyngeal mass was visible just anterior to the left Eustachian tube orifice. Other than this no other masses were visible. Bilaterally mobile vocal cords were seen.

Examination of oral cavity revealed left peritonsillar swelling leading to asymmetric palate and slight deviation of the uvula to the right side.

To further evaluate the left sided parapharyngeal mass, MRI/CT scan was planned.

FNAC findings show features of pleomorphic adenoma (Figures 1 and 2).

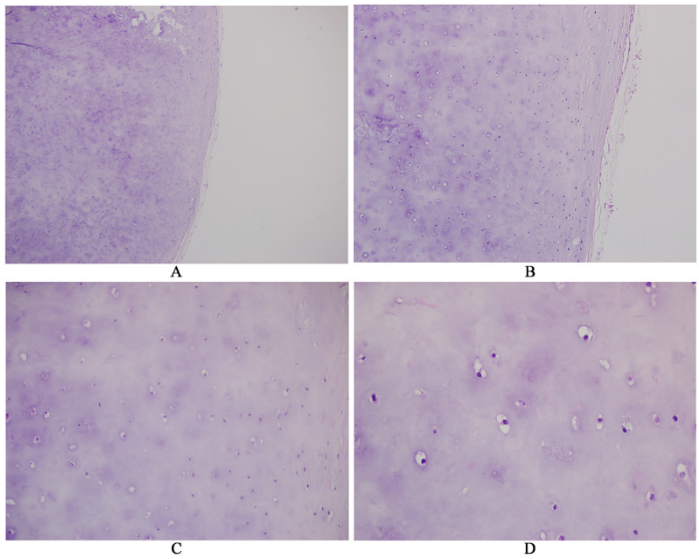

Figure 1: Chondromyxoid stroma along with islands epithelial and myoepithelial cells (H&E Staining; 20X, 100X, 200X & 400X, respectively).

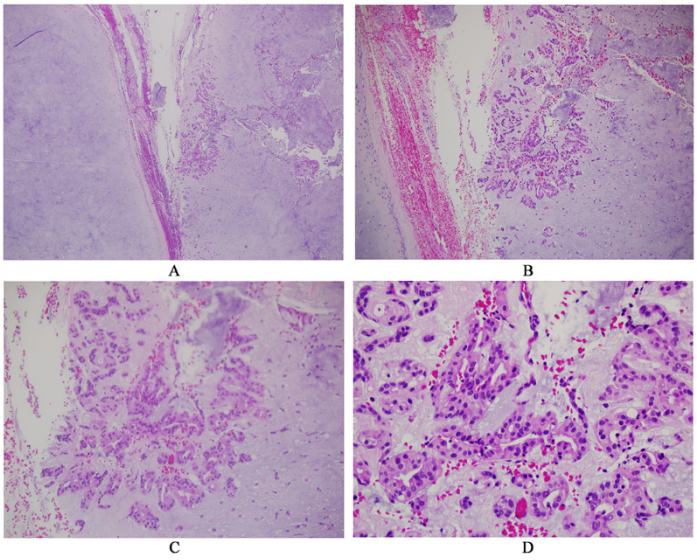

Figure 2: Pleomorphic adenoma showing squamous metaplasia (H&E Staining; 20X, 100X, 200X, & 400X, respectively).

Discussion

Parapharyngeal masses are rather rare in occurrence, comprising only 0.5% of all the tumors arising in the head neck region. Majority of such masses (78%) are found to be benign [7].

Clinically the parapharyngeal spaces are divided into two spaces: the pre-styloid space and post-styloid space. These two compartments are divided by the fascia from the styloid process and extending to the tensor veli palatine muscle. Fatty tissue is the major content of the pre-styloid space. In this antero-lateral space the deep lobe of the parotid gland remains embedded with other minor or ectopic salivary glands along with a branch of the Vth cranial nerve (trigeminal nerve).

The post-styloid compartment is poteromedial in location containing internal carotid artery, internal jugular vein, 9th to 12th cranial nerves (glossopharyngeal, vagus, spinal accessory, and hypoglossal nerves), cervical sympathetic chain, and lymph nodes.

Location of the tumor as well as difference in the contents of the two compartments explains the diverse nature of the different masses arising in the parapharyngeal space.

There are about 70 types of histopathologically different tumors originate in this space [5]. As already mentioned majority

of these tumors are benign in nature (80%). Salivary glands tumors being the most common tumors followed by neurogenic tumors and lymph node tumors.

Majority of the parapharyngeal space tumors are diagnosed incidentally; these are usually asymptomatic, painless and are missed in routine examination.

The left sided parapharyngeal mass in our patient was also diagnosed incidentally around 9 years back. The tumor was also asymptomatic; this time the patient presented with complain of reduced hearing in the left side.

Majority of the parapharyngeal masses increase in size along the path of least resistance, along the lateral pharyngeal wall, tonsillar fossa and in the submandibular triangle. Sometimes, upon extension of the tumor to the caudal region leads to palpable mass close to the angle of the mandible. Thus, thorough clinical examination of the throat and the neck region are of utmost importance. Thorough clinical examination of the neck region including careful inspection and bimanual palpation is recommended. Also neurological examination to rule out any impairment of the cranial nerve functions (particularly of 9^{th}, 10^{th}, 11^{th} and 12^{th} cranial nerves) should be carried out [8,9].

Direct examination of the parapharyngeal space is rather limited because of the anatomical complexities and difficulty in accessing the space for examination. Hence importance of radiological investigation is of utmost importance (CT scan and MRI). MRI scan with gadolinium contrast is the most preferred investigation to identify the soft tissue, the extent of intracranial extension of the tumor and to locate the adjacent vascular structures, whereas CT scan is preferred to identify the bony involvement and the foci of calcification inside the mass [10,11].

Angiography is considered in larger tumors (especially vascular tumors like carotid body tumors, paragangliomas, etc.) [12]. Surgical intervention is the mainstay of treat in case of parapharyngeal masses [13]. The goals of surgery are adequate visualization of tumor in order to achieve complete tumor removal while at the same time preservation of adjacent vessels and nerves. Although there many surgical approaches described, the ultimate choice of approach depends upon the size of tumor, if malignancy is suspected, position of the tumor especially with respect to skull base and neurovascular structures.

Commonly adopted routes of surgery include transoral, transcervical, transparotid, transmandibular, infratemporal, etc.

Of all the approaches mentioned above, trancervical approach remains to be the most commonly adopted approach for removal of parapharyngeal masses of minor salivary gland origin [14] whereas transparotid approach is usually preferred for removal of deeply situated parotid tumors [15,16]. Transcervical-transparotid approach is also chosen in some cases of parapharyngeal masses arising from parotid lobe and extending to and or oblitering the prestyloid parapharyngeal space [17].

Transmandibular approach remains to be the oldest approach (time-tested) [18,19]. If malignancy is suspected or the lesion extends to skull base, jugular foramen, or intra cranium, infratemporal approach is selected [20].

Primary parapharyngeal masses are rather rare in occurrence hence there are only few published studies. Shahab and his colleagues published review of 114 parapharyngeal tumor cases collected over a long period of 27 years [21]. They have reported that 5 and 10- year survival rates for benign parapharyngeal tumor is 100%.

Besides surgical removal of tumor remaining to be the mainstay of treatment, radiation therapy should also be considered in elderly patients (especially in case of asymptomatic parapharyngeal schwannomas or paragangliomas).

In our case long history of the parapharyngeal tumor (diagnosed 9 years ago), and absence of symptoms suggested benign lesion even before removal of the treatment.

Following surgical removal of the parapharyngeal mass, histopathological examinations revealed the diagnosis to be pleomorphic adenoma (Figure 2).

The post-operative period was uneventful and patient recovered without any complications (especially neurological).

Conclusion

Parapharyngeal tumors are rare in occurrence. Routine examination of the oral cavity might raise the suspicion; the most common presentation being asymptomatic swelling in the lateral pharyngeal wall. Although in most of the cases these tumors are benign in nature, any symptoms (like pain or cranial nerve palsy or trismus) usually suggest malignancy.

Surgical removal of the tumor remains to be the mainstay of management with or with radiation. Observation without any intervention can be done in asymptomatic tumors in elderly patients not fir for surgery.

Declarations

Ethics approval and consent to participate: Not applicable.

Availability of data and materials: Data obtained for the study are publicly available under ‘Case description’.

Competing interests: The authors declare that they have no competing interest.

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Authors' contributions: All the authors of this paper contributed equally to this work; they made substantial contributions to the conception or design of the work or the acquisition, analysis, or interpretation of data for the work. They drafted the work or revised it critically for important intellectual content. They gave final approval of the version to be published.

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References

1. Carrau RL, Johnson JT, Myers EN (1997) Management of tumors of the parapharyngeal space Oncology 11: 633-40.
2. Akın I, Karagoz T, Mutlu M, Sahan M, Onder E (2014) Pleomorphic adenomas of the parapharyngeal space. Case Rep Otolaryngol 2014:168401.
3. Cohen SM, Burkey BB, Netterville JL (2005) Surgical management of parapharyngeal space masses. Head Neck 27: 669-675.
4. Kuet ML, Kasbekar AV, Masterson L, Jani P (2015) Management of tumors arising from the parapharyngeal space: a systematic review of 1,293 cases reported over 25 years. Laryngoscope 125: 1372-1381.
5. Riffat F, Dwivedi RC, Palme C, Fish B, Jani P (2014) A systematic review of 1143 parapharyngeal space tumors reported over 20 years Oral Oncol 50: 421-430.
6. Shinn J, Langerman A (2019) Parapharyngeal masses P. Roland (Ed.), Otolaryngology clinical case studies: oral board exam review, Anadem Publishing, Columbus, OH.
7. Betka J, Chovanec M, Klozar J, Taudy M, Plzák J, et al. (2010) Transoral and combined transoral-transcervical approach in the surgery of parapharyngeal tumors. Eur Arch Otorhinolaryngol 267: 765-772.
8. Maran AG, Mackenzie IJ, Murray JA (1984) The parapharyngeal space. J Laryngol Otol 98: 371-380.
9. Shoss SM, Donovan DT, Alford BR (1985) Tumors of the parapharyngeal space. Arch Otolaryngol 111: 753-757.
10. Som PM, Curtin HD (1995) Lesions of the parapharyngeal space, role of MR imaging. Otolaryngol Clin North Am 28: 515-542.
11. Gupta AJ, Chazen LC, Phillips D (2012) Imaging Evaluation of the Parapharyngeal Space. Otolaryngol Clin North Am 45: 1223-1232.
12. Som PM, Biller HF, Lawson W, Sacher M, Lanzieri CF (1984) Parapharyngeal space masses: an updated protocol based upon 104 cases. Radiol 153: 149-156.
13. Vallabhaneni AC, Mandakulutur SG, Vallabhaneni S, Prabha A, Banavara RK (2017) True Parapharyngeal Space Tumors: Case Series from a Teaching Oncology Center. Indian J Otolaryngol Head Neck Surg 69: 225-229.
14. Mydlarz WK, Agrawal N (2014) Surgical approaches to the parapharynx and nasopharynx, transparotid and transcervical approaches for removal of deep lobe parotid gland and parapharyngeal space tumors. Op Tech Otolaryngol 25: 234-239.
15. Day TA, Deveikis J, Gillespie MB, Joe JK, Ogretmen B, et al. (2004) Salivary gland neoplasms. Curr Treat Options Oncol 5: 11-26.
16. Nigro MF, Spiro RH (1977) Deep lobe parotid tumors. Am J Surg 134: 523-527.
17. Bass RM (1982) Approaches to the diagnosis and treatment of tumors of the parapharyngeal space. Head Neck Surg 4: 281-289.
18. Spiro RH, Gerold FP, Strong EW (1981) Mandibular "swing" approach for oral and oropharyngeal tumors. Head Neck Surg 3: 371-378.
19. Shah JP, Patel SG, Singh B, Wong R (2012) JatinShah's head and neck surgery and oncology. London: Elsevier Science.
20. Banuchi V, Dennis Kraus H (2014) Surgical approaches to the parapharynx and nasopharynx, The infratemporal fossa approach to the lateral skull base and parapharynx. Op Techn Otolaryngol 25: 254-258.
21. Shahab R, Heliwell T, Jones AS (2005) How we do it: a series of 114 primary parapharyngeal space neoplasms. Clin Otolaryngol 30: 364-367.