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Parapharyngeal tumours - Our experience

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Abstract: *Parapharyngeal tumours are groups of rare tumours in a relatively complex anatomical area. A proper planning of the surgical procedure based on clinical and radiological evaluation guided by strong anatomical knowledge and experience is the key to success in managing a case of parapharyngeal tumour*

Keywords: *Parapharyngeal tumours, schwannoma, Pleomorphic adenoma, Trans-cervical, trans-mandibular, stylohyoid window, radiological biopsy*

I. Introduction

Parapharyngeal tumours are groups of rare tumours in a relatively complex anatomical area. Rarity of these tumours and complexity of the anatomy gives the surgeon a scope to take up the challenge of a daunting task. We here have discussed 8 patients of different pathology to highlight different aspect of management of these tumours.

II. Materials And Methods

From March 2008 to September 2015, a total of eight patients of parapharyngeal tumours were admitted in the Department of ORL & HNS, Gauhati Medical College & Hospital. A detailed history and clinical examination was done. All patients were subjected to routine tests. Contrasts enhanced computerized tomography was done in all the cases and was used as an important tool for diagnosing in all the patients except in one patient where MRI was used because of larger size and suspected retrostyloid positioning. None of the patients were subjected to special tests like VMA estimation as there were no relevant findings to seek for it. Only one patient was subjected to FNAC.

III. Results And Observations

All the patients except one were female, between ages of 40 and 60 yrs, with an average age of presentation of 50 years. Seven of those patients were presented with intra oral swelling & rest one patient had a neck swelling. Apart from the swelling, two of the patients presented with snoring & one with facial peresis and pain. Average duration of presentation was six months.

For radiological evaluation, all the patients were subjected to contrast enhanced computerized tomography. One patient with large tumour underwent MRI evaluation with view to have better muscle fascia delineation. FNAC was not done all the cases except one who had recurrent parotid tumour presenting with facial paresis, as the radiological evaluation was diagnostic about the tumours' benignity and extent.

Of the eight patients, one patient was lost prior treatment due to various co-morbidities. All the other patients underwent appropriate surgical management. Two patients were operated by trans-cervical access by stylohyoid windowing. Three patients were operated by trans-cervical trans-mandibular approach. Both tumours were large more than 5 cm. Trans-mandibular resections were repaired by miniplate and inter-maxillary fixation. The patient who had a recurrent parotid tumour was operated via trans-parotid approach. Rest one patient was operated by intra-oral route.

Total resection was possible in six patients. Total resection could not be achieved in one case as operative findings dictated skull base and masticator muscle involvement. Romovac drain was used in all the patients. Ryles tube feeding was given in three mandibulectomy patients. None of the patients needed blood transfusion. Normotensive anesthesia was used in all the patients.

Post operatively, both the patients who underwent stylohyoid windowing had hoarseness. One of the patients had nasal regurgitation and hypoglossal nerve paresis. One patient had inferior alveolar nerve injury leading to loss of sensation of the one half of lower lip. The patient with recurrent parotid swelling had facial nerve paresis and took 3 months to recover .There was one patient with miniplate extrusion for which we had

operate second time but there was no mal-union. All the post operative patients are on follow up except the post parotidectomy patient who completed post operative RT and was lost to follow up.

IV. Figures

Fig 1. Clinical photograph showing a parapharyngeal mass presenting as intra-oral swelling

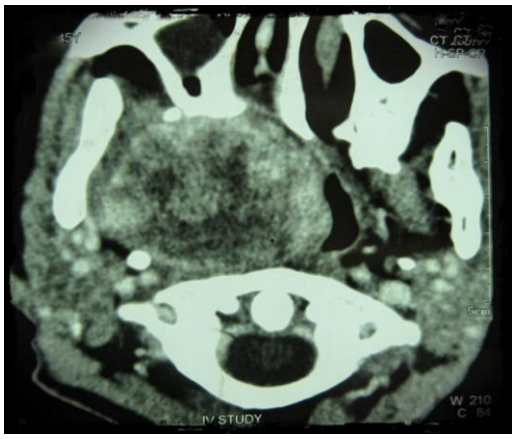

Fig 2. Contrast CT showing Parapharyngeal mass

Fig 3. Preoperative photograph showing incision line Transcervical transmandibular approach

Fig 4. Intraoperative photograph exposure of Mandible for transmandibular approach

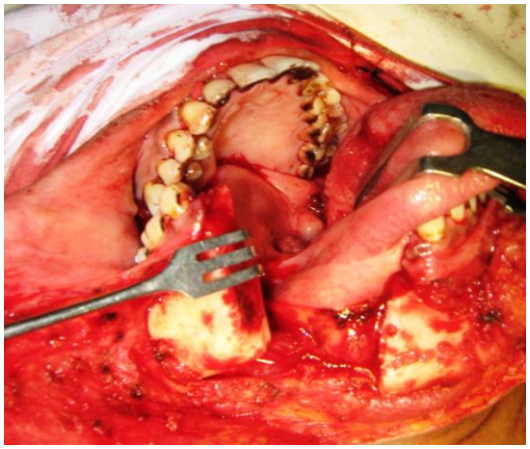

Fig 5. Intra-operative photograph showing Para-median Mandibulotomy

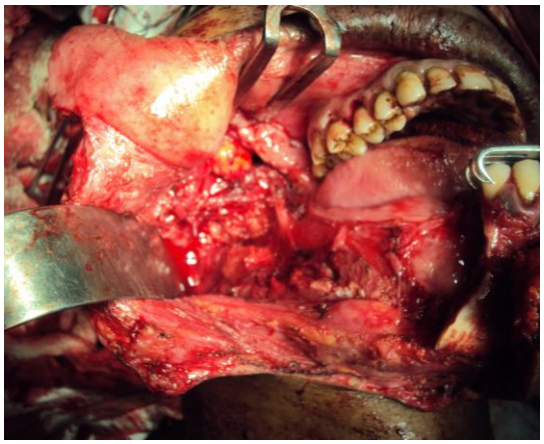

Fig 6. Intra-operative photograph after removal of tumour by Transcervical Transmandibular approach

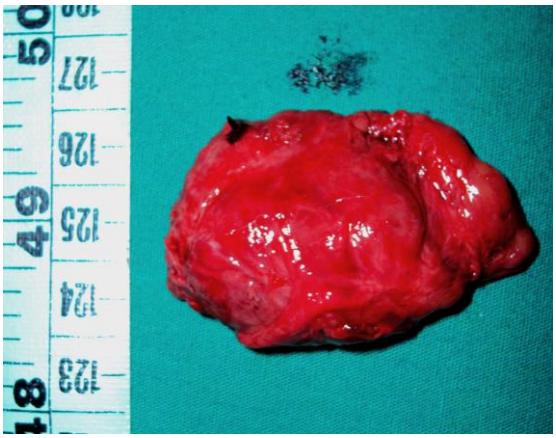

Fig 7. Post operative specimen

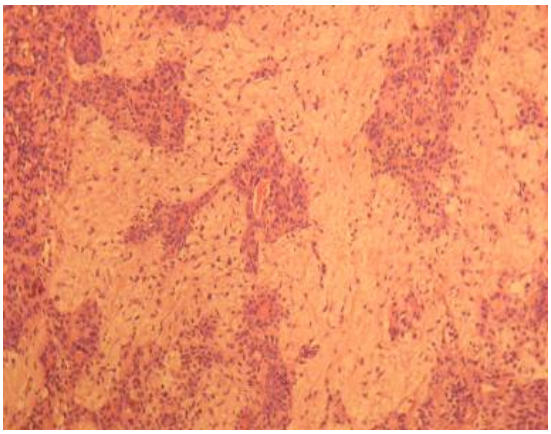

Fig 8. Post operative HPE showing Pleomorphic adenoma

V. Discussion

Parapharyngeal tumours comprise 1% of all Head and Neck tumours. Histologically parapharyngeal tumours have got a long list of differentials. The commonest pre-styloid tumour being of salivary origin and commonest post-styloid tumour being of neurogenic origin [1]. The consideration of the histopathological entity is of prime importance for surgical planning [2]. The commonest presentation of such tumour is swelling in neck. Pain and neuropathy should direct the clinician towards primary or metastatic carcinoma. In our study group also, one patient of recurrent parotid swelling presented with pain and facial paresis. FNAC of this particular patient revealed it to be pleomorphic adenoma only, but post operative histopathology revealed it to be adenoid cystic carcinoma. FNAC was not done routinely these patients. Meyers et al. [1] opined about "Radiological biopsy" for preoperative diagnosis of parapharyngeal tumours as most of the tumours of this area are of benign in origin. If there are no evidences of bone erosion or nerve palsies, there is no necessity of any cytological or histological diagnosis as it never dictates the surgical procedure better than a sound radiological evaluation.

Apart from proper head and neck examination, family history is important to rule out familial paraganglioma. If there is any positive history, then it is prudent to enquire about history of palpitation, flushing and uncontrolled hypertension. Such patient has to be evaluated for pheochromocytoma [4].

Meyers et al [3] highlighted about the dependency on CT scan. They showed it can give more than 96% accuracy on site, vascularity and histological assumption of salivary or neurogenic origin. It is also to be noted that more than 80% of the tumours are benign in origin.

Regarding the surgical approach, trans-oral excision can be taken up for small tumours [3]. But because of limited exposure, identification of neurovascular structures are difficult. Risk of oral contamination and seedling of salivary tumours in this approach are also high [3]. Only one of our patients was operated by trans-oral route because to its small size.

Three of our patients were operated by trans-cervical trans-mandibular approach because of their large size and retrostyloid positioning. Both of them were of salivary tissue origin. Kequin et al [5] and Olsen [7] also opined for trans-mandibular approach for larger and retro-styloid tumours. Intactness of the inferior alveolar is the point to be taken care of. Many authors have advocated invested "L" osteotomy for it. In our series we did step osteotomy in one patient where we could save the inferior alveolar by drilling out the nerve. In one patient accidental dissection of the nerve gave rise to permanent damage to it. Meyers [1] opined that trans-mandibular approach is rarely necessary for larger tumours. Two of our patients were operated by trans-cervical approach using stylohyoid windowing; both the tumours were pre-styloid tumours. This approach gives an adequate exposure for pre styloid tumours. Cohn S. M [6] suggested that removing stylohyoid ligament gives an adequate exposure. Meyers [1] commented on sectioning of stylomandibular ligament and anterior dislocation of mandible to increase exposure by about 50%. Both the operated patients were diagnosed as vascular tumours. One patient was operated by trans-parotid approach, in which we could not achieve R0 resection because of diffuse muscular and neurovascular infiltration. This particular patient presented with pain and facial paresis, F.N.AC failed to give pre operative diagnosis of adenoid cystic carcinoma and CT scan also failed to comment on muscle infiltration because of post operative fibrosis.

Regarding the complication, one of our patients had extrusion of mini plate. We could attribute it to the continuation of the incision, which was dictated by the large size of the tumour and thinning the mucosa, thereby oral contamination. Both the patients, who underwent trans-cervical approach, had hoarseness of different degrees and one also had hypoglossal paresis which recovered within three months. In their review article of parapharyngeal tumours, Meyers et al and Attia [8] found the percentage of common cranial nerve palsies i.e. palsies of IX, X, XI and XII nerves ranges from 11% to 57%. The percentage seems to be higher in

the series where the percentage of malignancy is high. The patient, who underwent trans-parotid approach, had permanent marginal mandibular nerve paralysis because of it was scarified during the surgery. In immediate postoperative period, three patients had nasal regurgitation. Accidental dissection of inferior alveolar nerve during doing mandibulotomy gave a permanent sensation loss of the operated side lower lip.

VI. Conclusion

A proper planning of the surgical procedure based on clinical and radiological evaluation guided by strong anatomical knowledge and experience is the key to success in managing a case of parapharyngeal tumour. An endeavor of optimum effort to gain maximum result helps avoiding unwanted complications and gives the surgeon pleasure of completing a challenging task successfully.

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