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A CLINICAL STUDY ON PRIMARY PARAPHARYNGEAL SPACE TUMOUR

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ABSTRACT

INTRODUCTION: Parapharyngeal space tumours are uncommon in head neck region. They are situated in a deep and complicated potential neck space. Mainstay of management remains surgical excision, though it is very difficult and complication prone.

MATERIAS & METHODS: A retrospective clinical study was done on 54 cases of primary PPS tumour. Their mode of presentation , imaging, cytopathology and histopathology results were noted. Different surgical approaches was evaluated.

RESULT ANALYSIS: Benign tumour was found in 81.5% cases. Salivary gland tumours were most common followed by schwannoma. CT scan is the first line investigation. Transcervical route is the most common surgical approach.

CONCLUSION: Different types of tumours are found in PPS. Mortality and morbidity is related with surgery itself rather than the disease process. So surgeon must respect his learning curve.

KEYWORDS

Parapharyngeal space tumour, carotid paraganglioma, schwannoma

INTRODUCTION

PPS tumours are not very common and incidence is only 0.5 % of total head neck area neoplasm[1]. They are situated in a deep and complicated potential neck space where examination is very difficult. There is paucity of literature describing the nature and presentation of tumours in parapharyngeal space. Staging of primary parapharyngeal space (PPS) tumour masses are not yet done. There is always dilemma regarding approach to the lesions of this region, to provide complication free complete tumour removal to the patient. So there is always need for study on primary PPS tumours.

AIMS & OBJECTIVES

1. To find out different types of primary tumours in PPS
2. To note their mode of presentation
3. Different surgical approaches and comlpications

MATERIALS & METHODS

This retrospective study was done on fifty four number of cases over a period of four years (from August 2014 to July 2018) in the department of ENT and Head & Neck Surgery, NRS Medical College, Kolkata . We have enlisted 54 cases of primary PPS tumour for this study . There are mass lesions extending to this space from other areas like nasopharynx, oropharynx and hypopharynx. These group include carcinoma and juvenile nasopharyngeal carcinoma. They are excluded from this study. We have included only primary tumours in this space.

Examinations:

Meticulous history was taken regarding mode of presentation and progress of disease. Thorough examination was done including inspection, palpation, bimanual palpation and auscultation as vascular masses are not uncommon here. Physical examination is often difficult, as most of the tumour is deeply situated in PPS. Thorough local examination combined with search for nerve palsies and cardiovascular examinations were done with special importance

Investigations:

Imaging and tissue diagnosis is of utmost importance for proper management. We advocated CT scan and MRI for all the cases. MR angiography was done in the cases of suspected vascular lesions. PET scan was done in few cases to find out the primary neoplastic lesion site in cases of unknown primary.

FNAC was done in all cases for tissue diagnosis. The findings corroborated with post operative histopathology in 78% of cases. Most common cytopathology report was benign salivary gland tumour followed by schwannoma, carotid body tumour, adenocystic carcinoma, lymphoma and others.

Surgery:

Surgical excision was planned for all these 54 cases. Surgery is always difficult as lesions are deeply situated in a potential space with complicated anatomy. Excision of tumour from post styloid compartment was much more difficult and prone to complications as they are related with lower four cranial nerves and great vessels. Surgical goal was adequate exposure and total clearance of disease. Every care was taken to prevent injury to vital structures. Surgical approach was chosen depending on the location and size of tumour, relation with great vessels and tissue diagnosis.

RESULT ANALYSIS

Out of total 54 cases 34 were male and rest 20 females. With a male to female ratio of 1.7. So it was a male predominant disease. Mean age was 34.6 years as most of the patient presented in fourth decade of their life.

Presentation

All the cases presented with visible space occupying lesion/mass along with combination of other associated symptoms like neck pain, dysphagia, trismus, otalgia, hearing loss and tinnitus. Mode of presentation of the mass is very important as it dictates towards the diagnosis and surgical approach . Most of the cases presented with neck swelling(28 cases). Five cases presented with only medial bulging of oropharynx. Both neck and oropharyngeal swelling was observed in twenty one cases(Table-1). Other symptoms like dysphagia, otalgia, trismus, hot flush, tachycardia, numbness were also found in few cases.

Table-1: Mode of presentation of mass

Presentation of mass	No of cases
Neck mass	28
Medial bulging of oropharynx	5
Combined presentation	21

Surgical approach

PPS tumour are predominantly treated by surgery. Surgical excision is done for all the cases in our study. Most common approach was cervical/external(transcervical and trans parotid) as it was adopted in thirty four cases. Intraoral approach is not very popular worldwide[2]. But, we have found very good result in 10 selected cases(Table-2). Trans cervical and trans parotid approach was selected for 10 cases each. Transmandibular approach was chosen in ten cases.

Table-2: Surgical approach

Surgical approach	No of cases
Intra oral	10
Trans cervical	24
Trans parotid	10
mandibulotomy	10

Histopathology

10 cases were malignant(18.5%) and most of the cases was benign (81.5%). All carotid paraganglioma are considered benign as no distant metastasis or local infiltration was found during operation. Different histological types are described in table-3.

Table-3: Final tissue diagnosis.

Histopathology report	No of cases
Salivary tumours	33
Schwannoma	7
Carotid paraganglioma	6
Lymphoma	2
lipoma	2
Unknown primary	2
fibroma	2

Complications:

All the complications aroused due to injury to vital structures during access to the tumour. A sizeable number of patients had temporary nerve palsies(15%). Most of them recovered but three cases suffered from permanent facial nerve palsy. We have operated on 6 cases of carotid paraganglioma. Three patient developed temporary hemiplegia and two of them recovered within two month. Malocclusion was complained by two out of ten cases where mandibulotomy was done.

DISCUSSION

Parapharyngeal space is basically an inverted pyramid shaped potential space. It extends from skull base up to the greater cornu of hyoid bone. It is situated lateral to pharynx and medial to ramus of mandible and submandibular salivary gland along with superficial fascia of neck[3].

Apart from primary tumour, masses from other area like nasopharynx, oropharynx and hypopharynx may extend to this area. These are mostly carcinoma extending to PPS specially from nasopharynx and oropharynx. They are well advanced cases(stage-IV) and not amenable to surgery and managed by chemoradiation. Benign mass like juvenile nasopharyngeal angiofibroma may also extend in PPS. These cases are not included here also.

These are generally very slow growing tumour and become evident when it is quite large. Moreover, they are situated in a deep potential space where physical examination is very difficult. So radiology is the mainstay of diagnosis and surgical planning. The diagnosis of pre styloid and post styloid mass is critical to guide the surgeons for selection of approach[4] Ultrasonography was done in lot of cases but it proved no value for management planning. So it is not mentioned at all. CT scan is easily available and it describes excellent deep tissue plain, bony lesion and physical co-relation . It was done as a first line investigations in all cases.

MRI is excellent in soft tissue demonstration. It distinguishes between vascular and non-vascular tumours. Presence of internal flow voids in MR imaging in a mass greater than 2 cm is suggestive of paraganglioma rather than schwannoma[5]. It was advised in all cases also.

MR angiography was suggested in 6 cases of carotid paraganglioma to know the extent of involvement of the carotid artery. It was Shamblin grade-III in 2 cases. Grade-II in 3 cases and grade-I in 1 case.

Most of the PPS tumour are managed by surgical excision. Kuet et al[6] published a reviewed article and described that 96% of cases are managed by surgical excision . Intra oral route is not recommended in most of the literature[2]. But we have done it in 10 cases(18.5%) and found very good post operative result. We can avoid extensive tissue dissection and scar marks if intraoral route is followed. Proper selection of case is very important before choosing intra oral route as final part of the tumour is removed by finger dissection.

The criteria we followed for intra oral route are as follows.

1. Pre styloid tumour, visible and palpable from oral cavity
2. Benign mass, well encapsulated.
3. Good plain of fat tissue around it.
4. No attachment with great vessels

After operation, all samples were sent for histopathology for final diagnosis. Mondal A et al found an accuracy rate of 88% by per oral route for FNAC[7] . In our study, FNAC findings corroborated with post operative histopathology in 78% of cases. Most common cytopathology report was benign salivary gland tumour followed by schwannoma, carotid body tumour, adenocystic carcinoma, lymphoma and others. Accuracy of cytopathology varies with different studies. P Monda et al described an accuracy of cytology up to 98.8% [8]. We have done non guided cytology and this may be the cause for lower accuracy rate.

In a review of 1143 cases, Rifatt F et al. described 70 different histological types of PPS tumours where 937 cases (82%)were benign and 206 cases (18%) were malignant [9]. In our study 18.5 % cases are found to be malignant. It includes two lymphoma, two unknown primary and six cases of malignant salivary gland tumour(4 mucoepidermoid carcinoma and 2 adenocystic carcinoma). Vast majority of PPS salivary gland tumour are benign(60-80%). Mucoepidermoid carcinoma (21-26 %) and adenocystic carcinoma (11-15%) are common salivary malignant tumour[10]. We have found 82 % benign and only 18% malignant lesion in salivary gland tumours.

CONCLUSION

Primary PPS tumour are situated in a deep potential space in neck which is very difficult for physical examination. CT scan and MRI helps in three dimensional conceptualization of the tumour which is most important for surgical excision. Most of the tumour are benign and very slow growing. The morbidity and mortality are related with surgery it self and not the disease. So meticulous surgical technique is utmost important for any interventions in this area.

REFERENCES

1. Suren Krishnan. Tumours of parapharyngeal space.In: John C Watkinson, Raymond W Clarke, editors. Scott- Brown's otolaryngology, Head and Neck Surgery 8th edition. CRC Press, 2019;157-169.
2. Andrew S Jones. Tumours of parapharyngeal space.In: Michael Gleeson, editor. Scott-Brown's otolaryngology, Head and Neck Surgery 7th edition. Hodder-Arnold, 2008;2532-2533.
3. Jonas t Johnson. Parapharyngeal Space. In: Eugene N Myers editor. Operative otolaryngology Head and Neck Surgery. 1st edition. W.B. Saunders Company, 1997;656-657
4. Ji Hoon Shin et al. Imaging of parapharyngeal space lesion. American Journal of Roentgenology. Dec 2001,Vol 177(6): 1465-1470
5. S Biswas, S Saha, A Sadhu. Pictorial assay- parapharyngeal space lesion. Indian Journal of Radiology and Imaging. 2005, Vol-15(1): 41-46
6. Kuet ML, et al. Management of tumours arising from the parapharyngeal: a systematic review of 1293 cases reported over 25 years. Laryngoscope2015;125(6):1372-81.
7. Mondal A et al. Per oral fine needle aspiration cytology of parapharyngeal space lesions. Acta Cytologica.1993; 37:694-8.
8. P Mondal et al. Fine needle aspiration cytology of parapharyngeal tumours. Journal of Cytology/Indian Academy of Cytologists. 2009Jul-Sep;26(3):102-104
9. Riffat F et al.A systematic review of 1143 parapharyngeal space tumours repoted over 20 years. Oral Oncol 2014;50(5):421-30
10. Patrick Sheahan and Ashok R Saha. Salivary gland tumours. In:John C Watkinson, Ralph W Gilbert editors. Stell & Maran's Textbook of Head and Neck Surgery and Oncology. 5th edition. Hodder Arnold; 716-717