

## Mass Parapharyngeal Space – An Experience at CMH, Rawalpindi

\*Zeeshan Ayub, \*\*Atif Najam, \*\*\*Urwa Sarwar, \*\*\*\*Bashir Ahmed,  
\*\*\*\*\*Zubair Khan, \*\*Muhammad Farooq

**ABSTRACT:** **OBJECTIVE:** To review surgical approaches to parapharyngeal space and post operative histology of parapharyngeal masses. **STUDY DESIGN:** Descriptive study. **PLACE AND DURATION:** Department of ENT, Head & Neck surgery Combined Military Hospital Rawalpindi from January 2006-January 2008. **PATIENTS & METHODS:** Patients of any age and sex with radiologically confirmed parapharyngeal masses. **RESULTS:** There were a total of 14 cases included in this study; ten were managed by cervical, two by transparotid and two by mandibular swing. The commonest tumor was pleomorphic adenoma (57%), followed by schwannoma (14%), lymphoma (14%), craniopharyngioma (7%), and metastatic deposit (7%). **CONCLUSION:** Treatment of parapharyngeal masses is a challenge for the surgeon. We mostly employed the cervical approach because it needs relatively less dissection but it depends upon the size and site of tumor. Pleomorphic adenoma of the parotid gland remains the commonest tumor in complex anatomical space. Diagnosis is based on radiological evidence and cytological. **Key Words:** Parapharyngeal masses, Cervical route, Pleomorphic adenoma.

**INTRODUCTION:** Masses of the parapharyngeal space present a treatment challenge. Of the facial spaces of neck, the parapharyngeal space plays an important role in diagnosis and treatment of neck masses because of its central location and extension of tumour to and from this space<sup>1,2</sup>. Parapharyngeal masses can be divided into three broad categories: congenital, infectious or inflammatory, and neoplastic etiologies. Most of the parapharyngeal masses are benign and include tumours of salivary gland other tumours less commonly neurogenic tumors and metastatic lesions are encountered<sup>3</sup>. Historically, the transoral approach has been used to excise smaller parapharyngeal lesions, but this approach is no longer used due to the inadequate exposure which led to a high rate of vascular injury, tumor spillage and local recurrence. Selection of approach dealing with parapharyngeal tumours is based on the need for exposure, the size of the lesion, and the nature of the lesion i.e. encapsulated vs infiltrating, or benign vs malignant<sup>3</sup>.

**PATIENTS AND METHODS :** This research project was carried out as a descriptive study in department of ENT & Head and Neck surgery, Combined Military Hospital Rawalpindi from January 2006 to January 2008. There were a total of seventeen radiologically confirmed cases of mass parapharyngeal space that presented to ENT OPD from January 2006 to January 2008. After relevant investigations it was decided that fourteen patients were to undergo surgical excision. Two patients were unfit for general anaesthesia and one refused surgery. Cervical approach was planned in ten, transparotid in two and mandibular split in two of the patients. Resected specimen sent for

histopathological examination. The patients age, gender, surgical approach and post operative histopathology report was recorded.

**RESULTS:** There were 9 males (64%) and 5 (26%) females in this study (Figure 1). Their ages varied from 31 to 57 years. Mean of the age was 41 years. Cervical approach was employed in 10 cases, transparotid in 2 cases and mandibular swing in 2 cases (Table 2). Histopathology reported as; pleomorphic adenoma in 8 cases (57%), followed by schwannoma in 2 patients (14%), lymphoma in two cases (14%), craniopharyngioma in 1 patient (7%), and metastatic deposit from nasopharynx in 1 patient (7%) (Table 1).

**DISCUSSION:** We employed the cervical approach in most of our cases. This is due to our experience with this approach and relatively less dissection as compared with other approaches. The approach entails the removal of the submandibular gland and thereafter it is relatively a blind dissection. Exposure can be increased by dividing the stylomandibular ligament. The most commonly encountered pathology was pleomorphic adenoma, which can arise from minor salivary glands in the parapharyngeal space or more commonly from congenital salivary rests. There were two cases of lymphoma and schwannoma. Histopathology of one patient revealed metastatic deposit of carcinoma nasopharynx, previously examination of the nasopharynx in the same patient did not reveal any abnormality. One patient had craniopharyngioma. Bass<sup>5</sup> and Som<sup>6</sup> divided approaches to parapharyngeal space into four groups, (i) cervical or submandibular approach, (ii) transparotid-cervical with or without angle

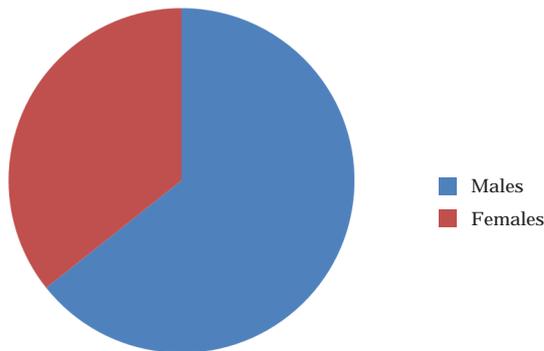


Figure 1: Gender distribution of Parapharyngeal masses.

S. No.	Para Pharyngeal Masses	Occurrence
1	Pleomorphic adenoma	8 (57%)
2	Schwannoma	2 (14%)
3	Lymphoma	2 (14%)
4	Craniopharyngioma	1 (7%)
5	Metastatic deposits	1 (7%)

Table 1: Frequency of para-pharyngeal masses.

S. No.	Methods	No of cases
1	Cervical	10
2	Trans-parotid	2
3	Mandibular Swing	2

Table 2: Methods employed.

mandibulotomy, (iii) cervical-transpharyngeal with midline mandibulotomy, and (iv) transmastoid-transcervical approach for jugular foramen lesions. The cervical or submandibular approach gives access to the parapharyngeal space through the submandibular space, and lesions arising from the minor salivary glands can also be removed using this approach. The transparotid-cervical approach provides exposure for facial nerve dissection and is used for tumours arising from the parotid. The cervical-transpharyngeal approach, also known as the "mandibular swing" utilizes midline mandibulotomy at the symphysis. Tracheotomy is mandatory in this procedure. With the hemimandible reflected laterally, wide exposure is afforded<sup>7,8,9</sup>. In a retrospective study by Seth et al of 166 cases, histopathology showed that

21 (12.7%) were malignant, 145 (87.3%) were benign, 76 (45.8%) were vascular, and 69 (41.6%) involved the skull base. Transcervical techniques were used in all cases<sup>10</sup>. In an 18 years review of thirty one operated cases Kenney et al found that the commonest aetiology was a deep lobe of parotid tumour (44%), followed by neurilemmomas (18%), there was only one paraganglioma. The most common route employed was transcervical route<sup>11</sup>. In a review of 23 cases by Allison et al the most common histological type (56.52%) was pleomorphic adenoma and the tumours were managed by transoral removal if small, or a combined transcervical approach if large<sup>12</sup>.

**CONCLUSION:** Treatment of parapharyngeal masses is a challenge for the surgeon. Pleomorphic adenoma of the parotid gland remains the commonest tumor in complex anatomical space. Diagnosis is based on radiological evidence and cytological.

#### REFERENCES:

1. Cowan DL, Hibbert J. Acute and chronic infection of the pharynx and tonsil. In: Kerr AG, Hibbert J, editors. Scott Browns Otolaryngology. 6th ed. Butter worth-Heinemann 1977. 5/4/1 – 5/4/23.
2. Barry MT, Vijay MR, Flavius G. Imaging of the parapharyngeal space: anatomy and pathology. Crit Rev Diagnos Imag 1991;31: 315-56.
3. Michael M, Herman J. Temporal bone neoplasm and lateral cranial base surgery. In Cummings CW, Harker LA, editors: Otolaryngology- Head and Neck Surgery, St Louis, 2005, Mosby.
4. Jackson CG, Harris PF, Glasscock ME 3d, Fritsch M, Dimitrov E, Johnson GD, et al. Diagnosis and management of paragangliomas of the skull base. Am J Surg 1990;159: 389-93.
5. Bass RM. Approaches to the diagnosis and treatment of tumors of the parapharyngeal space. Head Neck Surg 1982;4: 281-9.
6. Som PM, Biller HF, Lawson W. Tumors of the parapharyngeal space: preoperative evaluation, diagnosis, and surgical approaches. Ann Otol Rhinol Laryngol Suppl 1981;90: 3-15.
7. Ammirati M, Ma J, Cheatham ML, Mei ZT, Bloch J, Becker DP. The mandibular swing-transcervical approach to the skull base: anatomical study. Technical note. J Neurosurg 1993;78: 673-81.
8. Biedlingmaier JF, Ord R. Modified double mandibular osteotomy for tumors of the parapharyngeal space. J Oral Maxillofac Surg 1994;52: 348-52.
9. Dubner S, Spiro RH. Median mandibulotomy: a critical assessment. Head Neck 1991;13: 289-393.
10. Seth M, Cohen, MD, MPH \*, Brian B. Burkey, MD, James L. Netteville, MD Surgical management of parapharyngeal space masses Volume 27, Issue 8, Pages 669 - 675 Published Online: 6 May 2005.
11. Kenny PP, Christopher H. K, How MT. Parapharyngeal space tumours: an 18 year review The Journal of Laryngology & Otology 2002, 116: 170-5.
12. Allison RS, Van der Waal I, Snow GB. Parapharyngeal tumours: a review of 23 cases. Clin Otolaryngol 1989;14: 199-203.

## TEMPORAL BONE SURGICAL DISSECTION COURSE

April 07 - 11, 2014

Atlanta, Georgia - USA

Info: Opal Reynolds, Clinical Support Specialist

Email: Opal.reynolds@emoryhealthcare.org

Tel: 404-686-8184, Fax: 404-686-3782