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Case Report

Ear, Nose and Throat Section

A Rare Case of de novo Mucoepidermoid Carcinoma of Parapharyngeal Space: Excision by Mandibular Swing

ABHISHEK BHARDWAJ[1], NEENA CHAUDHARY[2], SHASHANK GUPTA[3], PARA CHAUDHARY[4]

ABSTRACT

Mucoepidermoid carcinoma of Parapharyngeal Space (PPS) not originating from parotid is a very rare finding. Tumours of PPS represent a formidable challenge to the surgeon in view of preoperative assessment and appropriate surgical approach. We present a clinical case of a mucoepidermoid carcinoma in the PPS in a 62-year-old female who presented to a tertiary care hospital with complaints of throat pain and difficulty in swallowing for duration of one month. Left parapharyngeal bulge was present on clinical examination and Computed Tomography (CT) revealed homogeneous non enhancing mass occupying left PPS. Intraoral fine needle aspiration cytology revealed features suggestive of mucoepidermoid carcinoma. Tumour was excised in toto using mandibular swing technique. It was a well encapsulated, dumb-bell shaped tumour separate from parotid with no invasion of surrounding tissue. Histopathology was consistent with low grade mucoepidermoid carcinoma. Patient was in follow up for past two years without any local recurrence or distant metastasis.

Keywords: Parapharyngeal bulge, Parotid gland, Tumour

CASE REPORT

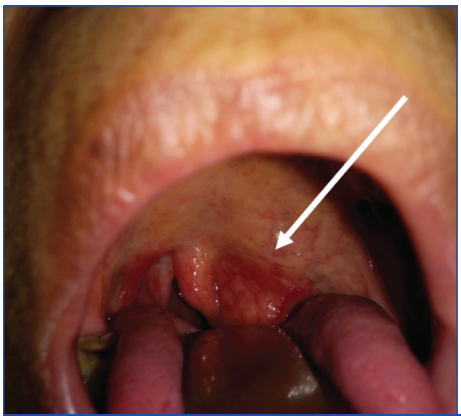
A 62-year-old female presented with complain of pain in throat and difficulty in swallowing for one month. Pain was localised to tonsillar fossa, acute in onset, continuous and not relieved by analgesics. There was no history of dental extraction or infection. The patient was a diabetic, diagnosed five years back, on medication had well controlled blood sugar levels. There was no significant family history. Intraoral examination revealed a bulge present in left lateral pharyngeal wall behind the left tonsil, pushing the tonsil anteriorly and medially [Table/Fig-1]. The rest of the oral examination was normal. There was no palpable cervical lymphadenopathy. Intraoral fine needle aspiration cytology showed malignant cells comprising of cords, sheets and clusters of an admixture of mucous, epidermoid, intermediate, columnar and clear cells suggestive of mucoepidermoid carcinoma. Neck examination, nasal endoscopy and laryngoscopy examination were normal. CT scan showed a homogeneous non enhancing mass, present in the poststyloid PPS pushing the tonsil antero-medially and abutting the internal carotid artery posteriorly [Table/Fig-2].

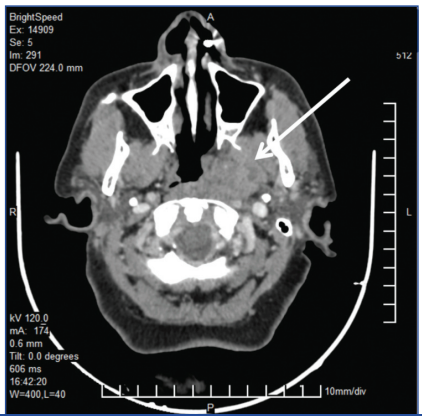
After preoperative routine blood tests, physician fitness for surgery was obtained and patient underwent excision of the mass by transcervical-transmandibular approach under general anaesthesia. Subplatysmal flaps were elevated after making a cervical incision with lip split extension. Paramedian mandibulotomy was done and mandible was retracted laterally to expose floor of mouth [Table/Fig-3,4].

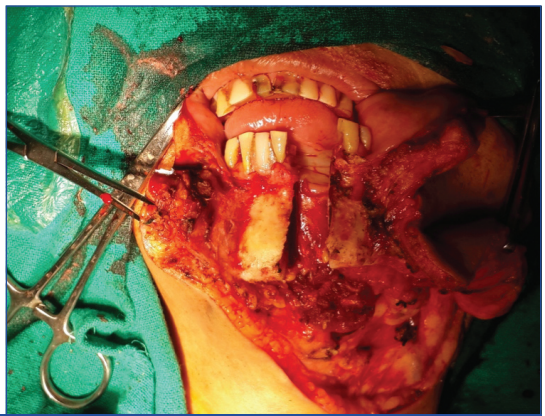
Floor of mouth was incised up to the anterior tonsillar pillar and tumour was exposed. Tumour was seen occupying PPS, posteriorly abutting internal carotid artery and superiorly temporal bone without invasion of surrounding structures. A dumb-bell shaped tumour mass measuring 5.5×3.5×1.5 cm was removed in toto [Table/Fig-5].

Anterior tonsillar pillar and floor of mouth were sutured. Mandible was closed using four screws and 2.4 mm titanium plate. Postoperative period was uneventful. There was no malocclusion of teeth and no complain of irregular bite. Histopathological examination confirmed presence of intermediate grade mucoepidermoid carcinoma. It showed cords, sheets and clusters of an admixture of mucous, epidermoid, intermediate, columnar and clear cells [Table/Fig-6].

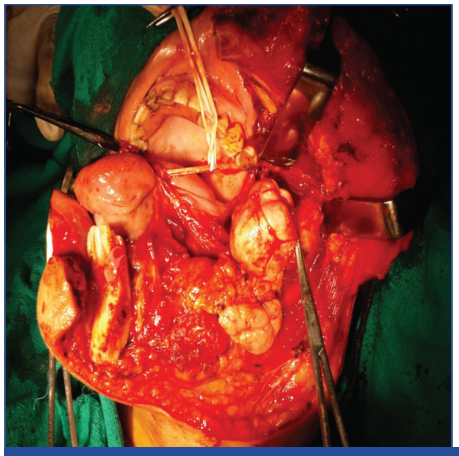
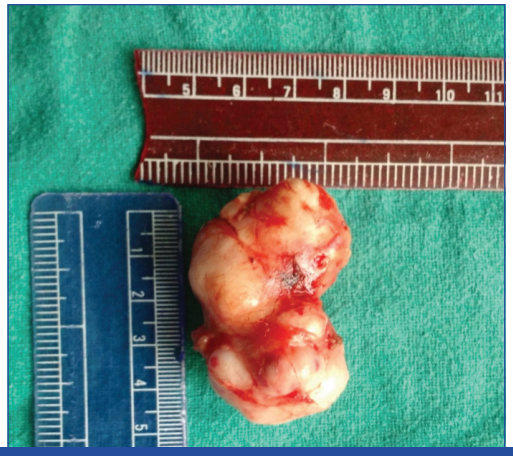
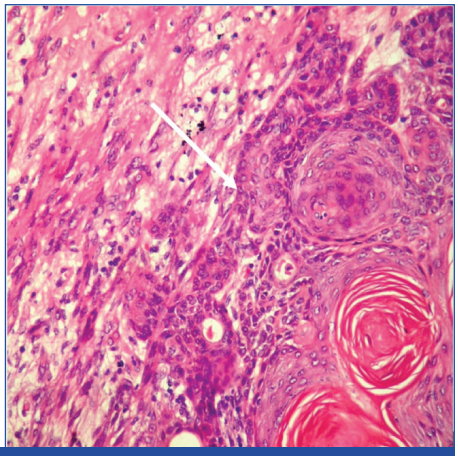
Patient received 66 Gy of postoperative radiation over a duration of seven weeks in 33 fractionated doses of 2 Gy each. The patient has been under regular follow up for past two years and has remained symptom free.







[Table/Fig-1]: Intraoral examination showing a smooth bulge occupying the left tonsillar fossa (white arrow), **[Table/Fig-2]:** Axial CT scan image showing a homogeneous non enhancing mass present in the poststyloid parapharyngeal space (white arrow) pushing the tonsil anteriorly and abutting the internal carotid artery posteriorly. **[Table/Fig-3]:** Lip split incision combined with paramedian mandibulotomy.

[Table/Fig-4]: Paramedian mandibulotomy combined with a transcervical approach provided adequate exposure of the parapharyngeal space and allowed tumour to be removed in toto. **[Table/Fig-5]:** Tumour mass 5.5×3.5×1.5 cm was removed in toto and was found to be dumb-bell shaped and firm in consistency. **[Table/Fig-6]:** Histopathological picture at 200X magnification showing cords, sheets (white arrow) and clusters of an admixture of mucous, epidermoid, intermediate, columnar and clear cells (H&E).

DISCUSSION

Primary tumours of the PPS are rare. They account for only 0.5% of head and neck neoplasms and the anatomy of the PPS makes clinical examination very difficult [1]. Therefore, these tumours are a challenge for the surgeon both in terms of performing a clinical examination and in planning an adequate surgical approach.

The PPS is shaped like an inverted pyramid with its base formed by the skull base and its apex extending to the greater cornu of the hyoid bone. It is divided into two compartments-the prestyloid space and the poststyloid space by fascia extending from the styloid process to the tensor-vascular-styloid fascia which is comprised by the tensor veli palatini muscle, its fascia, the stylopharyngeus and the styloglossus muscles [2].

The most common pathologies found in the PPS include primary tumours, metastatic lymph nodes and involvement from lymphoproliferative diseases and adjacent site tumours which extend into this space [1]. Salivary gland neoplasms (mainly parotid gland pleomorphic adenomas) are the most common in the prestyloid compartment, while the poststyloid space most commonly harbours neurogenic tumours like schwannomas and neurofibromas. About 50% of these tumours originates from either the deep lobe of the parotid gland or the minor salivary glands and 20% are malignant [3].

One rare malignancy in the poststyloid PPS is mucoepidermoid carcinoma. Mucoepidermoid carcinoma is the most common malignant salivary gland tumour. In the major salivary glands, 89.6% of cases present in the parotid [4]. Its incidence in the PPS is usually restricted to being a malignant neoplasm of variable aggressiveness of the deep lobe of the parotid gland. It lies in the prestyloid part of the PPS. High grade tumours are found to be aggressive and have been known to spread to surrounding draining lymph nodes. The low grade variants have been shown to have a comparably favourable outcome. However, they have also been known to show metastasis [5]. Three cell types are found in varying proportions: mucous, intermediate, and epidermoid cells. High grade tumours exhibit cytologic atypia, higher mitotic frequency, areas of necrosis and more epidermoid cells. High grade tumours behave like a squamous cell carcinoma; low grade tumours often behave similar to a benign lesion [6].

Mucoepidermoid carcinoma is very rare in PPS. In this report, we present a case of mucoepidermoid carcinoma of left PPS arising de novo and manifesting as medial displacement of lateral wall of oropharynx which was excised using mandibular swing technique.

PPS is a potential space providing accommodation to a variety of swellings, both benign and malignant, to structures lying within it and from adjacent structures lying in relation to it. Being host to such a variety of tumours makes it a topic of great academic interest. Mucoepidermoid carcinoma if present is an extension of the deep lobe of the parotid gland. De novo occurrence of mucoepidermoid carcinoma in the poststyloid PPS is a previously unknown entity.

Mucoepidermoid carcinoma is the most common malignant salivary gland neoplasm [4]. It arises from the reserve cells within the salivary ducts. Since these cells have the potential to develop into mucin producing cells and epidermoid cells, the tumour is composed of a combination of both. Both cell types are altered neoplastic cells. Histological grade is one of the most important prognostic factors in mucoepidermoid carcinoma, and overall 5-year survival rates vary from 92% to 100%, 62% to 92%, and 0% to 43% in low, intermediate and high grade tumours respectively [7].

In the present case, mucoepidermoid carcinoma arising de novo from poststyloid PPS was surgically excised by transcervical-transmandibular approach. This was chosen keeping in mind the proximity of the mass to internal carotid artery and the aim of achieving complete removal of disease. Surgical resection techniques described in the literature are transoral, transcervical, transparotid transcervical, transcervical transmandibular or infratemporal, and the correct choice between them depends upon accurate clinical and radiological assessment of the mass size and location, its relationship with surrounding vessels and nerves [8,9].

A wide surgical approach, complemented by neck dissection and radiotherapy, is the treatment of choice for mucoepidermoid carcinoma [7]. In our case, it was an encapsulated tumour without invasion of surrounding structures, hence tumour was removed without resection of adjacent structures. Neck dissection is indicated when there is clinical evidence of regional metastasis, high TNM stage, high histological grade, or proximity of tumour to regional lymph nodes [7]. Our case did not have any clinical or radiological evidence of regional metastasis and hence neck dissection was not done.

Histopathology report confirmed presence of intermediate grade mucoepidermoid carcinoma. Postsurgical radiotherapy is indicated in patients with clinical or histologically proven positive margins and in those with high grade tumours [10]. As neck dissection and resection of surrounding structures were not done in our case, the patient underwent postoperative radiotherapy even though it was an intermediate grade to ensure a complete cure.

CONCLUSION

Mucoepidermoid carcinoma, though a rare entity must be ruled out in patients presenting with a parpharyngeal bulge. Transcervical transmandibular approach for excision of poststyloid PPS mucoepidermoid carcinoma serves as an excellent approach with minimum morbidity and good postoperative outcome.

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PARTICULARS OF CONTRIBUTORS:
1. Senior Resident, Department of ENT, Head and Neck Surgery, Vardhaman Mahavir Medical College and Safdarjung Hospital, New Delhi, India.
2. Professor and Consultant, Department of ENT, Head and Neck Surgery, Vardhaman Mahavir Medical College and Safdarjung Hospital, New Delhi, India.
3. Postgraduate Student, Department of ENT, Head and Neck Surgery, Vardhaman Mahavir Medical College and Safdarjung Hospital, New Delhi, India.
4. Postgraduate Student, Department of ENT, Head and Neck Surgery, Vardhaman Mahavir Medical College and Safdarjung Hospital, New Delhi, India.

NAME, ADDRESS, E-MAIL ID OF THE CORRESPONDING AUTHOR:
Dr. Abhishek Bhardwaj,
House No. L89-C, 2nd Floor, L-Block, Saket, New Delhi-110017, India.
E-mail: abhi04stanley@gmail.com

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