

# Lipoma Of The Parapharyngeal Space

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## Abstract

Lipoma of the Parapharyngeal space is very rare, only eight cases having been reported in index literature. A case of lipoma of the parapharyngeal space is reported for its rarity, characteristic radiological findings and treatment options.

## INTRODUCTION

Parapharyngeal space neoplasms provide both diagnostic and therapeutic challenges. Neoplasms arising from the parapharyngeal space constitute 0.5% of all head and neck tumors. Lipoma of the parapharyngeal space is very rare, only eight cases having been reported in the index literature. We describe a case of a parapharyngeal lipoma in a 52-year old man, and discuss the possible presenting features, the investigative procedures and treatment options available.

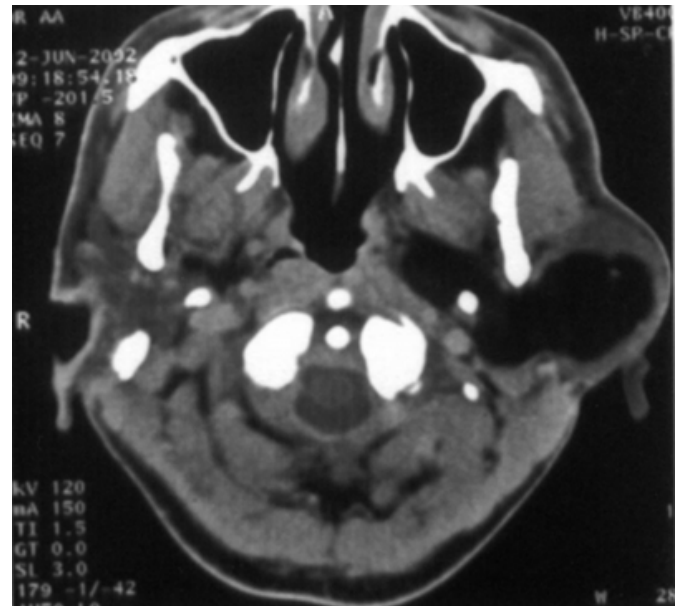
## CASE HISTORY

A 52-year-old male presented in the Out Patient Department of Lok Nayak Hospital, New Delhi, with a painless mass, in the left parotid region, since 18 months. He had no dysphagia or upper airway problems. The swelling was not associated with pain or facial asymmetry. On examination there was a soft to firm swelling of size 3x3 cm, with ill-defined margin in the parotid region. The overlying skin was normal and Cranial Nerve function remained intact. The working diagnosis was of lipoma of the parotid gland.

Fine needle aspiration cytology revealed scanty blood stained material and no definite opinion was possible. The FNAC was repeated twice with the same results. A Contrast Enhanced Computed Tomography was done, which showed a well defined, lobulated, hypodense, non-enhancing lesion involving the left parapharyngeal space, measuring 4.2 x 7.0 x 3.5 cm, extending from the base skull superiorly to the ramus of mandible inferiorly. The mass extended superficially between the styloid process and the ramus of mandible, displacing parotid gland laterally. (Fig. 1) The radiologist reported the lesion to be a left parapharyngeal space mass, either a lipoma or a liposarcoma.

## Figure 1

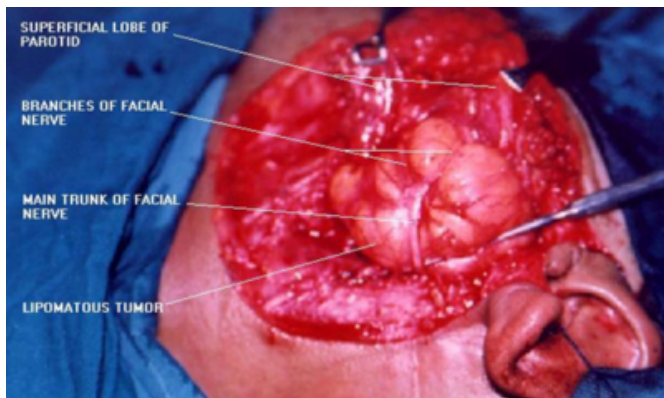
Figure I: Axial Section of the Contrast Enhanced CT Scan showing the Hypodense Non-enhancing lesion in the left parapharyngeal space.



The mass was excised under General Anaesthesia via the Trans-parotid approach. Modified Blair incision was used to expose the superficial lobe of parotid, which was found pushed antero-laterally by the tumor. The facial nerve and its branches were identified and the main trunk was stretched over the yellow-colored tumor. The superficial lobe was dissected and retracted anteriorly. The deep lobe of parotid was found compressed antero-laterally by the tumor (fig II). The tumor was dissected free from the surrounding tissue in the parapharyngeal space by blunt dissection and delivered in toto. All facial nerve branches were preserved and the post-operative period was uneventful (Fig III).

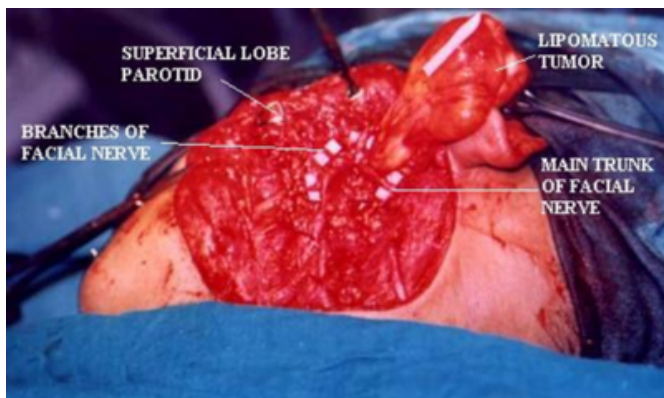
**Figure 2**

Figure II: A trans-parotid approach was used to expose the superficial lobe of parotid, facial nerve and its branches stretched over the tumor.



**Figure 3**

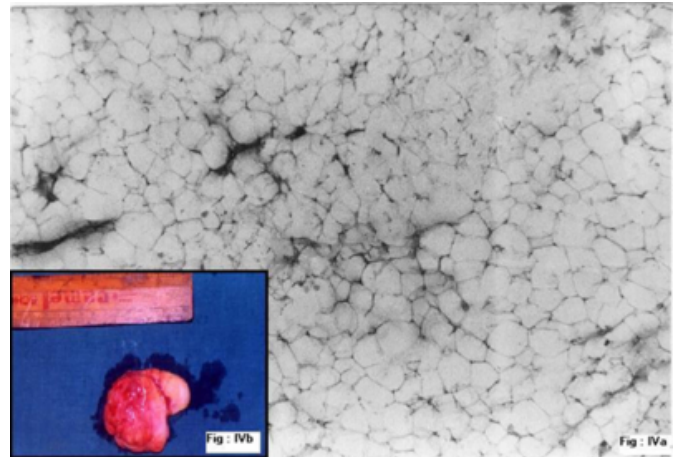
Figure III: The tumor dissected free from the parapharyngeal delivered in toto preserving all facial nerve branches.



The excised specimen showed a well-encapsulated, yellow colored soft tumor, with a soft consistency, measuring 7 x 4 x 3cm. On cut section, it had a typically lobulated lipomatous appearance (Fig IVa). Histopathological examination showed uniformly rounded cells with peripheral nuclei, confirming the diagnosis of a Lipoma (Fig IVb).

**Figure 4**

Figure IV: a: The excised specimen - a well-encapsulated, yellow colored soft tumor, with a soft consistency, measuring 7 x 4 x 3cm. b: Histopathological picture of rounded cells with peripheral nuclei, confirming the diagnosis of a Lipoma



## DISCUSSION

Tumors of the parapharyngeal space may arise primarily from within or secondarily invading it from surrounding structures. These lesions include tumors of salivary gland origin, neurogenic tumors, paragangliomas and metastatic lesions. The majority of these tumors are benign (70%), 45% of these tumors are of salivary gland origin, most frequently arising from the deep lobe parotid. 30% tumors are Nerve sheath tumors and paragangliomas, and 20 % are malignant lymphomas<sup>1</sup>. Other causes of parapharyngeal masses include asymmetrical pterygoid venous plexus, abscess, atypical second branchial cleft cyst, sarcomas etc. Lipomatous tumors involving this space are extremely rare. Only eight cases of parapharyngeal lipoma have been reported in the literature.<sup>2,3,4,5,6,7,8</sup>

A lipoma is an encapsulated, benign, subcutaneous and submucosal tumor composed of mature adipose tissue cells and is the most common mesenchymal neoplasm. 13% of the lipomas arise in the head and neck region and they are the most common benign tumors of the head and neck<sup>7</sup>. Most of these occur in superficial tissues, most commonly subcutaneously in the posterior nape of the neck<sup>5</sup>. Lipomas of the deep tissues in head and neck are rare and may develop in the anterior neck, infratemporal fossa, oral cavity, pharynx (most commonly the hypopharynx), larynx, and parotid gland<sup>5,7</sup>. Most lipomas grow insidiously and cause few symptoms other than those of a localized mass or mechanical displacement of adjacent structures. They are known to recur in 5% cases. Liposarcomas mostly arise de

novo but a few cases of malignant change in lipomas have been described<sub>5</sub>

Parapharyngeal lipomas typically present as painless asymptomatic masses. Symptoms reported include airway obstruction, sleep apnoea<sub>7</sub> and dysphagia<sub>3</sub>, as well as pressure effects on adjacent structures. These can include extension into the nasopharynx causing Eustachian tube orifice obstruction, which may result in serous otitis media<sub>6</sub>. A tumor may also compress the carotid sheath resulting in compromised blood flow through the ipsilateral carotid artery and jugular veins<sub>3</sub>. Only after the parapharyngeal lesion has grown to 2.5-3cm in diameter can a medial bulge of the lateral pharyngeal wall be determined clinically or a mass be palpated under the angle of the mandible<sub>2</sub>.

Fine-needle aspiration cytology may not yield cells representative of the whole of the mass and cannot, therefore, be relied upon to differentiate benign from malignant lesions Liposarcoma; the main differential diagnosis is also rare. Although CT/MRI may be suggestive, histology is essential to differentiate from a lipoma.

Radiological imaging is critical for an accurate pre-operative evaluation and planning the surgical approach.

Computerized tomography helps in precisely assessing the site and extent of these tumors and their probable histology. Lipomas appear as non-enhancing homogenous low-density areas with a CT value of -60 to -120 HU<sub>7</sub>. Mass and nodules or streaks within the mass will raise the possibility of a liposarcoma that radiologically is the main differential diagnosis. A 75 – 90% accuracy rate for CT has been reported<sub>8</sub>. In this patient, CT was helpful in making the diagnosis of the lesion without the necessity of an invasive procedure. Although there was no histological confirmation, the CT study was accurate in identifying the lipomatous nature of the neoplasm because of the characteristic low attenuation. The scan also accurately mapped out the site and extent of the tumor in the parapharyngeal space.

Management of parapharyngeal space lipomas is by surgical excision. Several surgical approaches to parapharyngeal

masses have been described including transcervical, transcervicosubmaxillary, transmandibular, transparotid, transoral and infratemporal<sub>9</sub>. Because of the large size of the tumor in our case, encroaching upon the base of the skull, two surgical approaches were considered, either the transcervical approach combined with a mandibulotomy or a transparotid approach. However, the latter was preferred on account of the head-on exposure of the large tumor extending from skull base superiorly till the level of the hyoid inferiorly. Superior haemostasis and control over the facial nerve was ensured via this approach because the tumor was extending superficially in the parotid region. The intraoral approach was avoided because it neither provides control over the major vessels, nor adequate exposure for extensive disease to maximize the chances of complete resection.

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