



## Plunging Lipoma Neck: A Rarity

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### Abstract:

Lipomas in the hand and neck region usually occur in the immediate subcutaneous tissue. Lipomas of the parapharyngeal space are very rare, only few cases have been reported in literature. We present the case of a left parapharyngeal space lipoma, in a 45-year old man, who presented in our hospital with a painless swelling in the neck. The relative rarity of such a tumor in this location, presenting features and management strategies were considered worth of presentation.

**Key words:** Lipoma, Pharynx, Neoplasms, Neck, Subcutaneous Tissue.

### Introduction

Neoplasms arising from the parapharyngeal space constitute 0.5% of all head and neck tumors [1]. Lipomas of the parapharyngeal space provide both diagnostic and therapeutic challenge. The anatomic characteristics of the parapharyngeal space make clinical examination of this area a difficult and unreliable method for assessing these tumors. We report a 45-year old man with left parapharyngeal space lipoma.

### Case Report

A 45-year old male presented in the outpatient department of our hospital, with a slowly progressive painless swelling in the left submandibular region for four months. There was no history of change in the size of swelling with meals. He had no dysphagia or upper airway problems. Clinical examination revealed a painless, nontender soft mass of size 3×3 cm with ill-defined borders occupying the submandibular region. The overlying skin was normal without signs of discolouration or abnormal vascularization. There was no clinical evidence of enlargement of the cervical nodes. Intraoral examination was normal. Ultrasound of the neck showed a hypoechoic collection of size 3×2 cm in left submandibular region in subcutaneous plane. Bilateral submandibular glands were normal. On sialogram, submandibular duct was dilated but there was no evidence of calculus. Sialogram showed bulky and irregular submandibular gland suggestive of sialectasis. The patient underwent MRI of the neck which revealed enhancing soft tissue mass on T1-weighted images. The lesion was extending from parapharyngeal region laterally and distally displacing the left parotid gland and extending into neck

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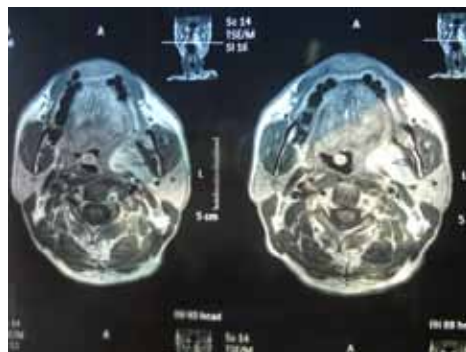
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between parotid and submandibular gland [Fig.1]. The mass was excised under general anaesthesia via the trans-cervical approach. A transverse incision was given 2 cm below the mandible in the submandibular region, subplatysmal flaps were raised and marginal mandibular branch of facial nerve was preserved. The mass had a fatty yellow appearance and was firmly adherent to the enlarged submandibular gland. The posterior part of the mass was deeply extending towards the parapharyngeal space. The tumor along with the gland was dissected free from the surrounding tissues and was excised completely [Fig.2]. Pathological examination revealed a lipomatous lesion with intersecting fibrous bands and was comprised of uniform appearing mature adipocytes consistent with a diagnosis of lipoma.



**Fig.1:** MRI showing parapharyngeal mass extending in neck between parotid and submandibular gland.



**Fig.2:** Preoperative photograph showing dissected out submandibular gland and parapharyngeal lipoma.

## Discussion

Neoplasms of the parapharyngeal space are relatively rare, accounting for less than 1% of tumours of the head and neck [1]. Most are benign in nature. Work and Hybels in a study found that 50% of parapharyngeal space tumors were of salivary gland origin, most frequently arising from deep lobe of parotid, 30% were neurogenic and 20% were miscellaneous [2]. Lipomas involving parapharyngeal space are extremely rare [3].

Lipomas are benign encapsulated tumors composed of adipose tissue cells. They commonly occur in the neck, shoulder, back, abdomen, arms and thighs. Lipomas are one of the most common soft tissue mesenchymal

tumors, accounting for approximately 16% of all the neoplasm [4]. They are the most common benign tumours of the head and neck. Most of these occur in the superficial tissues, most commonly located subcutaneously in the posterior nape of the neck [5]. Lipomas of the deep tissues in the head and neck are rare and may develop in the anterior neck, infratemporal fossa, oral cavity, hypopharynx, larynx and parotid gland [4,5]. They are usually of little clinical concern and tend to grow insidiously large without causing any symptoms. Sometimes lipomas may cause few problems which are due to localized mass compressing the surrounding structures and cosmetic concerns. Typically, these tumours are well circumscribed, are encapsulated (often by a fibrous shell), tend to be smooth or lobulated, are easy to remove, and rarely recur.

Parapharyngeal space (PPS) lipomas commonly present as painless and asymptomatic masses. Symptoms appear only when the mass is large and are related to compression of the surrounding structures. Symptoms include neck mass, dysphagia, pharyngeal mass, lower cranial nerve palsy, conductive hearing loss, sleep apnea and trismus [4,6]. The presence of pain, trismus or a neurological deficit is suggestive of malignancy.

Radiological imaging is a vital part of the preoperative evaluation and planning a surgical approach in these patients. The main objectives of imaging are to determine the extent of the lesion, to assess its resectability, to delineate its relationship to the surrounding major vessels and skull base. CT and MRI can accurately identify the lipomatous nature of neoplasm because of their characteristic low attenuation [7]. Lipomas appear as non-enhancing homogeneous low density areas with a CT value of -60 to -120 HU [4]. The accuracy rate of CT is 75 to 90% [3]. Most authors recommend MRI as the study of choice because its accuracy in delineating a PPS mass is 95%. On MR images, fat has typical signal intensity. On T1-weighted images, lipomas tend to have high signal intensity that diminishes with progressive T2 weighting. MR imaging provides better tumor delineation because it has superior soft tissue contrast resolution and clear definition of the location and longitudinal extent of the mass [7].

Management of parapharyngeal space (PPS) lipomas is by surgical excision. There are five surgical approaches to tumors of the PPS: the transoral, transcervical, transparotid, transcervical-transmandibular, and lateral skull base approaches [8]. The choice of surgical approach depends on the location, size, vascularity and malignant potential of tumor. Many authors have recommended the transcervical approach as the best access route for removing PPS tumors [9]. This approach provides direct access to the PPS, with adequate exposure of neurovascular structures. When tumor size is large or extends to the skull base or when improved exposure of neurovascular structures is needed, the combined transcervical-transmandibular approach is used [10]. If a tumor arises from the deep parotid lobe, the transparotid approach, which requires identifying the facial nerve branches, is appropriate. In our patient, we preferred the standard transcervical approach, as it provides good and safe exposure and direct access to the tumor plunging into the neck from parapharyngeal space.

Our patient was a middle aged male patient who presented with a slow growing left cervical mass. On MRI scan it was found to be a soft tissue mass plunging from left parapharyngeal space to submandibular area of neck. Complete surgical excision of the mass was done by trans-cervical route. Patient remained well in postoperative period and at six months follow up.

## Conclusion

The case is being presented to lay emphasis on following important facts-

- Lipoma of the parapharyngeal space is rare.
- MRI is the investigation of choice to know the nature and exact extent in PPS lipomas.
- Surgical excision in the recommended treatment and transcervical route is the preferred approach.

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