

# GIANT ANTERIOR NECK LIPOMA WITH MEDIASTINAL EXTENSION: A RARE CASE REPORT

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**Abstract-** Lipomas are benign mesenchymal tumour. Thirteen percent of lipomas are seen in head and neck region<sup>1</sup>. Anterior neck lipoma is a rare one & anterior neck lipoma with mediastinal extension is extremely rare. We are reporting a case of 48 yr. old female who presented with a huge swelling in the anterior neck region simulating a goitre. It was one of the largest of its own kind. FNAC & sonography helps in making early diagnosis of lipoma apart from clinical examination. Enucleation of lipoma from neck as well as mediastinum was done & followed up for 1 year without any complication.

**Index Terms-** Anterior neck Lipoma, giant lipoma, mediastinum, mesenchymal tumour

## I. INTRODUCTION

Lipomas are the most common benign mesenchymal neoplasm of adulthood & are usually subcutaneous but may develop in other places, e.g. Intermuscular, Subfascial, Parosteal, Subserous, Submucous, Intra-articular, Subsynovial, Subendocardium, Subepicardiac, Myocardium, Subdural or Extradural. They are actually a cluster of fat cells which become overactive. This is the commonest tumor of subcutaneous tissue. They are skin colored lesions & are firm & somewhat lobulated on palpation. Common sites of lipoma are back, arms, shoulder, anterior chest wall, breasts, thighs, abdominal wall, legs, forehead & face<sup>2</sup>. In head & neck region, where only 13% of lipomas are seen, posterior cervical space is the commonest site<sup>3</sup>. Anterior neck lipoma is a rare location for lipoma<sup>4</sup> and anterior neck lipoma with mediastinal extension is very rare. Fine needle aspiration cytology (FNAC) & sonography helps in making early diagnosis which can be supported with computed tomography (CT) & confirmed with histopathology report. Surgical intervention is challenging because of proximity to the great vessels & vagus nerve and is reserved for patients coming for cosmesis (most common indication), pressure effects & to rule out malignancy. We report a case of 48 years old female patient who presented with a huge swelling in the anterior neck region extending into the anterior mediastinum mimicking goitre.

## II. CASE REPORT

48 years old, female presented in Otorhinolaryngology OPD in Silchar Medical College & Hospital, Silchar with a huge swelling in the anterior aspect of neck since 20 years, which gradually enlarged in size & complained of occasional history of dyspnoea. Pt. was not having dysphagia or any complain related to her voice.

After taking consent, physical examination was carried out. Though swelling appeared like goiter but found to be smooth, soft and compressible. Overlying skin was of normal colour, stretched, not adhered to tumor & dilated veins were present over the tumor. Swelling was mobile, nontender. The surface of the mass was smooth. Edges were definite above & slips under the palpating finger (slip sign) & fingers couldn't get below the lower margin.



Figure 1: Preoperative photo of pt. with giant lipoma in anterior aspect & left side of neck.

FNAC was done & report suggested benign lipomatous lesion. Ultrasonography of neck showed a large well circumscribed hypoechoic mass lesion noted in front & left side of neck. Thyroid was found to be normal. & left carotid was displaced posteriorly due to mass lesion. On colour Doppler study, no increase in vascularity was seen. All features were suggestive of lipomatous lesion.

Radiological imaging: X-ray soft tissue neck (AP & Lateral view) reports showed a large soft tissue swelling in anterior aspect & left side of neck with mild anterior compression over lower part of trachea. X-ray chest PA view report showed widening of upper mediastinum & trachea was noted to be in midline.



Figure 2: X-ray soft tissue neck (AP & Lateral view) : large soft tissue swelling in anterior aspect & left side of neck with mild anterior compression over lower part of trachea.

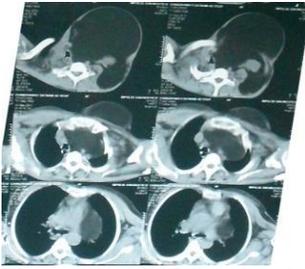


Figure 3: CECT: showing extension of lipoma into the mediastinum

On contrast enhanced computed tomography (CECT), a large homogeneous well defined fat density lesion of size 16×14.8×13 cm was noted involving the neck spaces on left side extending superiorly from the level of inferior aspect of parotid & inferiorly to the level of left hilum of mediastinum, anterolaterally the lesion was bounded by skin, posteriorly by pre & paravertebral muscles. Medially the lesion was crossing the midline, displacing the visceral space towards right side and in the mediastinum abutting the great vessels on left side. Left sternocleidomastoid muscle was compressed & thinned out. The lesion completely encased the internal jugular vein & encased part of IJV was showing dilatation. No intralesional soft tissue/calcification/postcontrast enhancement was noted.

Thyroid profile of pt. was found to be normal.

Operative details : pt. was positioned in supine position under general anesthesia. After the surgical field was scrubbed sterile drapes were placed. A single transverse incision was made following the relaxed skin tension lines & was carried down through the skin & subcutaneous tissue to the level of the lipoma. Tumor mass was smooth, soft, yellow, mobile, shining and encapsulated. Encased part of IJV dissected out properly from tumor mass & preserved. Enucleation of the tumor mass from neck as well as mediastinal extension was done, followed by excision of the excess skin. Total weight of the tumor mass was 1200 gm. Wound was repaired in layers after proper hemostasis & a vacuum drain was put inside for 48 hrs.

Histopathology report suggested it to be a lipoma.



Figure 4: Intraoperative photo of pt. just after the enucleation of lipoma from neck & mediastinum



Figure 5: Lipoma after the enucleation

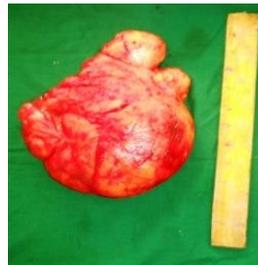


Figure 6: Lipoma after the enucleation

Pt. had a very good recovery without any complication & was followed for 1 year without recurrence.



Figure 7: Postoperative photo of pt. after 1 year of follow up.



Figure 8: Postoperative photo of pt. after 1 year of follow up.

### III. DISCUSSION

Now it is the time to articulate the research work with ideas gathered in Prevalence rate of lipoma is variable, 2.1:1000 to 1:100.<sup>5,6</sup> Lipoma is seen in all age group though mostly seen in fifth and sixth decade<sup>7</sup>. It constitutes five percent of all benign tumors of body and can be found anywhere in the body<sup>8</sup>. Lipoma in head and neck region is not commonly encountered (13%). The first case of lipoma in the neck was reported over 100 year's ago<sup>9</sup>. Amongst the head and neck lipomas, commonest location is posterior neck<sup>3</sup>. Anterior neck is a rare location for head and neck lipoma<sup>4</sup>. Lipoma of anterior neck with mediastinal extension is very rare.

Lipomas are slow growing, painless, mobile, non-fluctuant, soft masses & are generally well encapsulated. Lipomas can be singular or multiple & are typically asymptomatic unless they compress neurovascular structures. Beside frequent aesthetic consequences, lipomas can also exert pressure on surrounding tissues and structures. Patient with neck lipoma extending to mediastinum may present with complaint of dyspnoea as in our case.

Giant lipomas are defined by Sanchez et al as lesions with size of at least 10 cm in one dimension or weighing a minimum of 1,000 gm<sup>10</sup>. A large neck mass (>10 cm) with a rapid growth rate should raise concerns about a possible malignancy<sup>10</sup>. A long standing lipoma may undergo myxomatous degeneration, saponification, calcification, infection, ulceration due to repeated trauma & malignant change. Rarely malignant transformation of lipoma into liposarcoma has been described<sup>13, 14</sup>. Differentiation of lipoma from liposarcoma may be difficult.

Atypical lipomatous tumors are considered to be well-differentiated liposarcomas <http://emedicine.medscape.com/article/987446-overview>. When a fatty tumor is encountered in an intramuscular or retroperitoneal location liposarcomas should be considered in differential diagnosis, which has predilection for local recurrence but they don't metastasize generally. Although the diagnosis is mostly clinical, imaging tools are useful to confirm the adipose nature of the lesion and to define its anatomic border, & exclude possible communication with the spinal canal.

Histologically lipomas are composed of mature adipose tissue, and several subtypes occur when other mesenchymal elements are present<sup>11</sup>, for example fibrous tissue, nervous tissue or vascular tissue. According to WHO classification of soft tumours these can be classified into nine groups, including lipoma, lipomatosis, lipoblastoma, angioliipoma, myoliipoma of soft tissues, chondroid lipoma, spindle cell lipoma, and finally hibernoma and pleomorphic lipoma<sup>12</sup>. Most common subtype is conventional lipoma which is well encapsulated mass of mature adipocytes & varies considerably in size. All subtypes are painless except angioliipoma. Hibernomas are benign, uncommon tumors presumably arising from brown fat that may occur in the back, hips, or neck in adults and infants & has a slightly greater tendency to bleed during excision and to recur if intralesional excision is performed.

The characteristic sonographic appearance of head and neck lipomas is that of an elliptical mass parallel to the skin surface that is mostly hyperechoic relative to adjacent muscle

and that contains linear echogenic lines at right angles to the ultrasound beam<sup>15, 16</sup>.

Computed tomography is modality of choice to confirm lipoma. Lipomas appear as homogenous low density areas with a CT value of -50 to -150 HU with no contrast enhancement<sup>17</sup>. A thin soft tissue capsule may be seen surrounding a subcutaneous lipoma. Within the lesion there should be homogeneous fat density with few, if any internal septa. On CT scans capsule of lipoma is barely visible or adjacent mass effect may be the only clue to its presence. Larger lesions may contain blood vessels. A significant soft tissue element or heterogeneity of attenuation within a fatty lesion raises the possibility of liposarcoma.

In MRI, Lipomas have well defined margins with a uniform signal intensity of fat on all sequences (best confirmed using fat-suppressed sequences). Some lipomas may also have internal septa, an appearance mimicking a well differentiated liposarcoma (termed atypical lipoma). The use of contrast enhanced fat suppressed T<sub>1</sub>-weighted images can be helpful in separating between enhancing nodular tumour & non-enhancing linear septas. Margin of lipoma is clearly defined as "black rim", distinguishing them from surrounding fat<sup>18</sup>. Calcification is rare & forms centrally within an area of ischaemic necrosis but more commonly it's a feature of a liposarcoma.

Surgical excision of lipoma is the definitive treatment. Surgery is reserved for patients coming for cosmesis (most common indication) and pressure effects & to rule out malignancy. Smaller lipomas can be excised easily with low recurrence rate because they usually grow expansively between different fascial planes without infiltrating the neighbouring structures. Surgical intervention of giant lipoma of anterior neck with mediastinal extension is challenging because of proximity to the great vessels, vagus & spinal accessory nerves, lungs & heart. Preoperative consent regarding possible complications such as injury to neurovascular structures etc. must be taken. Lipomas may be lobulated, and it is essential that all lobules be removed. Complete surgical excision with the capsule is advocated to prevent local recurrence. Other modalities of treatment have been reported, like liposuction<sup>19, 20,21,22,23</sup> & steroid injections<sup>24</sup>. Liposuction is sometimes preferred as there is less scarring<sup>22,23</sup> following the procedure but there is higher chance of recurrence compared to excision if residual tumour or capsule, remains after the procedure. For smaller lipomas steroid injections may also be used, but several injections are required and the overlying skin may be depigmented. Surgery for giant lipoma in anterior neck with mediastinal extension should be done in a meticulous way.

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