

# Glimpses on Rare Cases of Thigh Swellings – A Case Series

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**Abstract:- Swelling in the thigh is one of the commonly presenting condition in surgical OPD which draws curiosity among surgeons about the exact pathology and their management. These long standing swellings are mostly soft tissue tumors which are usually painless but draws attention due to their increasing size and cosmetic disfigurement. We are presenting six unusual cases of thigh swellings which are pathologically rare including Giant Baker's cyst, Hydatid cyst and Schwannoma of thigh. One patient with secondary metastatic inguinal lymph nodes from malignant melanoma was referred to cancer institute for further management. All other patients were evaluated and surgically managed by excision and biopsy. There were no post-operative complications during 3 months follow-up period.**

**Keywords:- Schwannoma, Melanoma, Cyst, Baker's, Hydatid, Haematoma.**

## I. INTRODUCTION

Swellings in the thigh may differ in etiology having variable clinical findings and imaging features. Primary work-up includes imaging. Pre-operative diagnosis is possible in many cases by FNAC and MRI imaging. The peripheral nerve sheath tumor also called as Schwannoma or neurilemmomas are common benign nerve sheath tumors in the extremities occurring in adults between 25-55 years of age. They also arise from Cranial nerves and Cutaneous nerves of the head and neck. MRI of the soft tissue tumor plays an essential role in imaging of extremities. Surgical excision is the treatment of choice.

Baker's cyst is seen in the Popliteal region, but when enlarged it can extend to the posterior aspect of lower one third of thigh or lie over the gastrocnemius muscle which may confuse the clinical diagnosis. In patients who present with a hard swelling in the groin or upper anterior thigh with clinical suspicion of secondaries in the inguinal lymph nodes, ipsilateral foot should be examined for evidence of any pigmented lesion suggestive of malignant melanoma.

If the swelling has variable consistency or cystic in nature, history of Foreign body prick should be enquired with a suspicion of Implantation dermoid cyst.

## II. CASE SERIES

### ➤ Case 1

A 56 year old male presented with swelling over the left upper thigh since 1year. Swelling was associated with pain, continuous, non- radiating type and gradually increasing in size from 2cm x 2cm to attain the present size of approximately 6cm x 4 cm. Patient had no history of trauma to thigh. On clinical examination there was an oval shaped swelling in the left upper thigh over antero-medial aspect, measuring 6cm x 4cm, soft to firm in consistency, freely mobile and non pulsatile [Fig-1] with no evidence of any primary lesions in the left foot. A clinical diagnosis of soft tissue tumor was made. FNAC showed features of benign spindle cell lesion - likely Schwannoma.

MRI of left upper thigh showed a well defined cystic lesion measuring 5.2 x 5.8 x 8.8 cm over medial aspect of upper thigh in the intermuscular compartment lateral to gracilis muscle and medial to adductor longus muscle suggestive of benign cystic lesion. Patient was evaluated with routine blood investigations which were within normal limits.

With a pre-operative diagnosis of left thigh schwannoma, patient underwent Excision and biopsy under spinal anesthesia. Intraoperatively 'S' shaped incision was made over the swelling and the swelling was carefully separated from the nerve fascicle of medial femoral cutaneous nerve of thigh and was excised completely without damaging it [Fig-2]. Post operative period was uneventful and patient was discharged on 3<sup>rd</sup> post-operative day with oral antibiotics and analgesics. Sutures were removed on 10<sup>th</sup> day with no early post-operative complications noted. Histopathology of the specimen revealed features of schwannoma with verocay bodies on 40x magnification.



Fig 1 Swelling Over Left Upper Thigh



Fig 2 Schwannoma- Intraoperative

➤ *Case 2*

A 56 year old male patient presented with history of swelling over the posterior aspect of left thigh since 25 years. The swelling was increasing in size since 1 year and was painless. On examination of left thigh, an oval shaped swelling measuring 30cm X 20cm occupying the lower half of the posterior aspect with smooth surface and well defined borders [Fig-3]. It was cystic, fluctuant and transilluminant. Restriction of mobility noted on contraction of hamstring muscles. Ultrasound surface scan showed a well defined large multi lobulated hyperechoic lesion with multiple Cysts and internal echoes noted measuring approximately 14.5cm x 22.7cm x 13.5cm (vol-3700cc) in the Subcutaneous plane. FNAC was done which revealed parasitic lesion with granulomatous reaction. Patient underwent excision of the cystic lesion under spinal anesthesia. Post-operative period was uneventful and was treated with IV antibiotics for 5 days. Histopathology revealed features of Hydatid cyst. Patient was discharged with Tab. Albendazole - 400mg OD for 3 weeks.



Fig 3 Cystic Swelling Over Back of Left Thigh

➤ *Case 3*

A 55 year old male patient presented with swelling over posterior aspect of lower 1/3<sup>rd</sup> of right thigh extending towards popliteal region since 2 years associated with intermittent attacks of pain in the right knee and difficulty in flexion of right knee. Patient was not a known diabetic or hypertensive. On examination the swelling was cystic in consistency having lobulated surface. Transillumination test was positive. Swelling was extending towards the medial aspect of right leg. MRI of the right lower thigh and knee revealed features of osteoarthritis and a huge Baker's cyst with septations extending to lower aspect of right thigh. After pre-operative evaluation, patient underwent complete excision of the cyst under spinal anesthesia [Fig-4]. Intraoperatively multi-lobulated cystic swelling with clear fluid noted. Postoperatively patient was treated with IV antibiotics with immobilization of right knee and a posterior slab for 5 days. Histopathology revealed features of Ganglion cyst. Patient was discharged on 5<sup>th</sup> post operative day. On follow-up, patient had good range of mobility of knee joint without pain.



Fig 4 Large Baker's Cyst

➤ *Case 4*

A 42 year old male presented with history of swelling over the left upper thigh since 6 months. Initially it was about 2cm x 3cm in size when he noticed and has gradually increased in size to attain the present size of about 10cm x 10cm. Swelling was not associated with pain. Patient had a past history of trauma to Left thigh about 8 years ago but had not noticed any swelling following trauma in that region. On clinical examination there was a soft, non-tender swelling 10cm x10cm over the left upper thigh with another small swelling over the lateral aspect of thigh measuring 3cm x 3cm with cross fluctuation noted between two swellings [Fig-5]. FNAC was tried which yielded only old blood aspirate. MRI of left thigh revealed a well defined multi-loculated intercommunicating collection with few fluid levels in the intramuscular plane of tensor fascia lata muscle with few hyperintense areas (clots) - suggestive of chronic hematoma [Fig-6]. Patient underwent incision and drainage [Fig-7] with evacuation of about 300 ml of hematoma under Spinal anesthesia. The wound was packed with Betadine soaked ribbon gauze and patient underwent closure of the wound by secondary suturing after 10 days.

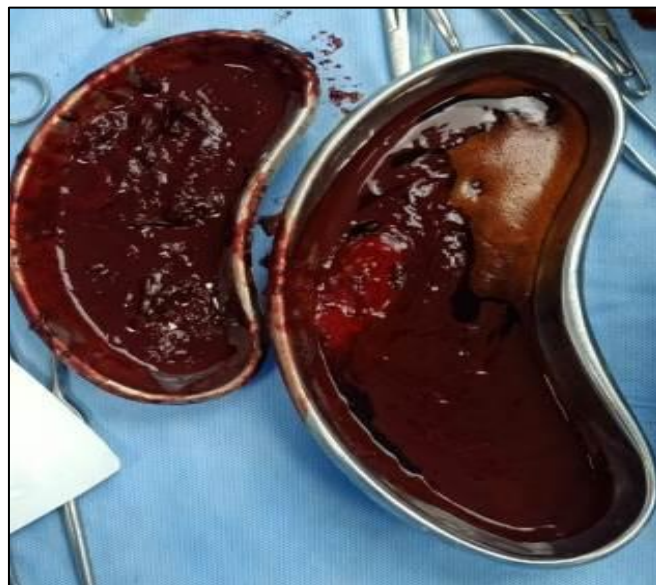


Fig 7 Evacuated Haematoma



Fig 5 Soft Swelling Over Left Upper Thigh with Small Swelling Over Mid Thigh having Cross Fluctuation

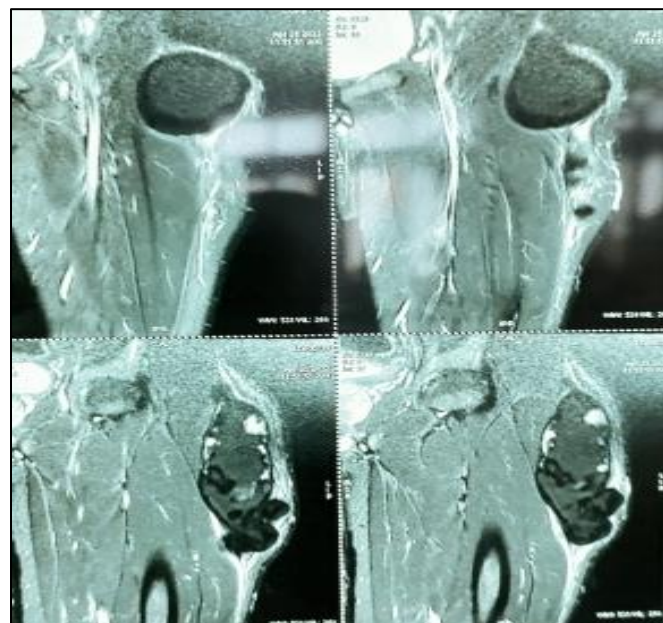


Fig 6 MRI Left Thigh Suggestive of Hematoma

➤ *Case 5*

A 48 year old female presented with a hard painless swelling over left upper thigh since 6 months. There was no history of trauma to thigh and on enquiry she gave history of corn excision over the left great toe 1 year back. Later she noticed hyperpigmentation over the tip of great toe, for which she had applied native medicine. On clinical examination there was a hard nodular, non tender, irregular swelling over the left inguinal region extending to upper inner aspect of left thigh measuring 12cm x 10 cm [Fig-8]. Swelling was not fixed to underlying muscle and skin over the swelling was pinchable. On examination of the left foot there was a blackish irregular patch of skin over the plantar aspect of left great toe measuring 2cm x 3 cm suggestive of Malignant Melanoma [Fig-9]. FNAC of the upper thigh swelling showed secondary Metastatic malignant melanoma lesion. Patient was referred to cancer institute for further evaluation and management.



Fig 8 Hard Irregular Swelling - Left Upper Thigh



Fig 9 Melanoma Left Great Toe

### ➤ Case 6

A 65 year elderly male presented with swelling over the right lower thigh and knee since 2 years. He had a history of thorn prick just above right knee 3 years back. Patient had no restriction of knee movements and had no comorbidities. On examination there was a solitary swelling above and over the right knee anteriorly, with irregular surface measuring 6cm x 5cm. Skin over the swelling showed features of resolving inflammation with skin peeling [Fig-10]. Consistency of the swelling was variable having soft and firm areas and freely mobile. A clinical diagnosis of Implantation dermoid cyst was made. Following pre-operative workup cyst was excised under local anesthesia. Post-operatively partial skin necrosis noted which was managed with periodic dressing. The excised specimen showed features of chronic Granulomatous inflammation with areas of necrosis. Patient responded with regular dressings and oral antibiotics.



Fig 10 Implantation Dermoid Cyst

### III. DISCUSSION

Schwannomas (Neurilemmomas) are peripheral nerve sheath tumors most often found in patients between 20 to 40 years of age but may also be seen in children. They present as a solitary mass in the head and neck region, mediastinum and over the flexor aspect of upper and lower extremities, rarely in association with spinal and para spinal nerves. These

tumours may undergo malignant transformation<sup>[1]</sup>. Schwannomas are usually solitary and appear as encapsulated masses which compress the nerve of origin and tend to compress the surrounding structures. Most tumors are < 5 cm in greatest dimension, larger tumors may be seen in retroperitoneum. Multiple schwannomas may be associated with Von-Reckling Hausen's neurofibromatosis. Histologically elongated tumor cells arranged as long eosinophilic cords and compact ovoid Bodies (Verocay bodies) are seen. Hyalinization of the blood vessels is a prominent feature of most Schwannomas<sup>[2]</sup>. Retroperitoneal schwannoma shows cystic changes and thickened hyalinised vessels<sup>[3]</sup>.

Hydatid disease is most common in sheep-raising areas. Occurring due to infection by the tapeworm *Echinococcus granulosus* in its larval or cyst stage. 70% of hydatid cyst form in the liver, a few ova pass through the liver and are held up in the pulmonary capillary bed or enter the systemic circulation, forming cysts in the lung, spleen, brain or bones<sup>[4]</sup>. About 11 cases of Skeletal muscle hydatid cysts were reported in Iranian journal in which most of them presented as a painless swelling<sup>[5,6]</sup>. A patient with a swelling over the left hemithorax since 6 months was diagnosed as Hydatid cyst in the latissimus dorsi muscle which was excised successfully<sup>[7]</sup>. During excision of hydatid cyst a surgeon must be careful to avoid spilling of the contents as anaphylaxis and dissemination can occur. Post-operatively patient should be treated with albendazole 10mg/kg/day for 21 days to 3 months.

Other soft tissue swellings can be a Chronic hematoma which can be diagnosed by MRI of thigh and is treated by incision and drainage. Baker's cyst can be giant and rarely extend into muscular plane in the thigh, and present as a soft tissue swelling in lower posterior aspect of thigh<sup>[8]</sup>. It is Usually associated with Rheumatoid arthritis. Malignant Melanoma in the toe or heel can metastasize to inguinal lymph node which can present as huge firm to hard mass in the upper anterior thigh. Patient needs chemotherapy and wide excision of the tumor mass by Surgical oncologists. A rare case of implantation dermoid above the knee which was extending over the extensor aspect of thigh was also included in this article. A subcutaneous freely mobile swelling with variable consistency having past history of a thorn prick can make the clinician to suspect a Implantation dermoid.

### IV. CONCLUSION

Chronic soft tissue swellings over the thigh are due to soft tissue tumors (lipoma, Schwannoma, sarcoma). If the swelling is cystic one should also include Hydatid Cyst in the muscles of thigh as a differential diagnosis.

Ultrasonography, CT scan, MRI are the diagnostic method of choice for the pre-operative diagnosis of swellings in the thigh. The swelling at the saphenous opening may be primary lymphoma, metastatic lymph node deposits from malignant melanoma of the foot. Most of the thigh swellings can be treated by surgical excision, and followed up after histopathological examinations.

Diagnosed cases of soft tissue sarcoma, Secondary lymph node metastasis needs evaluation and staging and treatment by specialists at Oncology institutes.

➤ *Informed Consent:*

Written informed consent was obtained from patients who underwent surgery for thigh swelling.

➤ *Conflicts of Interest:*

The authors declared no conflicts of interest.

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