



A case of Post Traumatic Soft Tissue cyst --- Morel Lavall'ee Lesion Left Thigh

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Abstract :

The Post Traumatic Soft Tissue Cyst- Morel Lavall'ee Lesion- a closed soft tissue injury produced most commonly as a result of direct trauma with tangential impact, which results in a cyst filled with blood, lymph and both viable necrotic fatty tissue studies articles on the subject are scarce in medical literature the present paper starts with an updated presentation of post traumatic soft tissue cyst of a patient who presented with a huge chronic Benign Soft Tissue Swelling over upper third Left thigh extending mid third with vague pain, following traumatic event in such clinical picture, keeping this above diagnosis a poorly recognized investigated entity considering it's importance-prone for post operative recurrence in contrast to pure Lipoma, in Differential Diagnosis for Benign Soft Tissue Swellings of Thigh, It has to be evaluated with MRI considering it's huge size, in view of delineating the anatomic relationship of post traumatic soft tissue cyst with underlying fascia, adjacent structures blood vessel for

planning the appropriate line of management.

Keyword : "Post Traumatic Soft Tissue Cyst, Trauma"

Introduction:

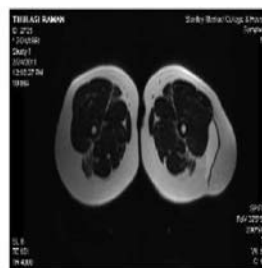
A post traumatic soft tissue cyst- Morel Lavall'ee lesion classically seen over the greater trochanter of the femur and represents a closed internal degloving injury typically associated with significant trauma. although strictly speaking a Morel-Lavall'ee lesion is only over the greater trochanter, similar shearing forces to the thigh, lumbar region, over scapula or the knee can result in identical lesions.

Case Report:

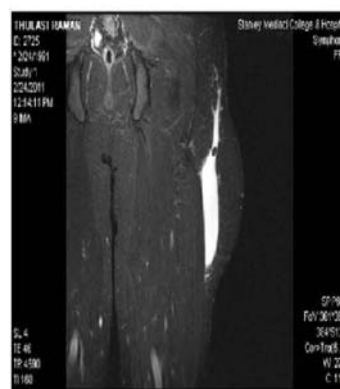
A 20 year old male presented with c/o solitary, swelling with mild pain in the posterolateral aspect of left thigh upper third extending to mid thigh of 5 months duration with progressive, gradual increase in size; he had a history of trauma 1 month before the onset of swelling left thigh, without any bony fracture,

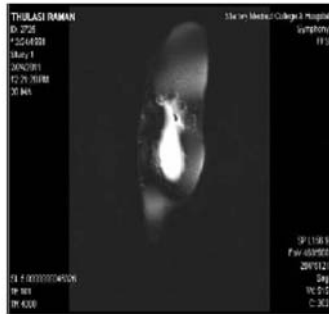
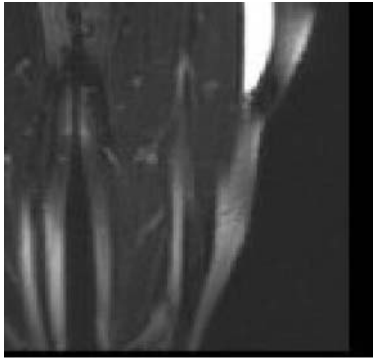
treated conservatively. On clinical examination, there was a soft, cystic, fluctuant not transilluminant, well-defined large swelling measuring 15*10 cm over postero-lateral aspect of left thigh, the swelling didn't have tenderness, or any other inflammatory signs, or skin punctum; didn't show transilluminant, arterial pulsation, skin over the swelling was found to be mobile, to have slippery edge, not fixed to fascia lata, or to the underlying structures, radiography left thigh both anteroposterior and lateral view showed soft tissue mass without calcification, no evidence of bone fracture, serous fluid for cytology- reactive inflammatory cells and dispersed lymphocytes in an eosinophilic background- reactive effusion; FNAC Left thigh swelling- clusters of mature adipocytes in hemorrhagic background, no evidence of malignant cells

Soft Tissue Cyst- under subarachnoid block, vertical incision of 10 cm made over the swelling, dissection was done all around swelling, a soft cyst of 15* 9 size found in subcutaneous plane, attaching to fascia lata; cyst was excised intact; on cut section of cyst, there was serosanguinous fluid of 300 ml, within the thick walled cavity; wound was closed with dead space obliterating-subcutaneous sutures, with closed suction drain; compressive dressing was applied, HPE report-non-viable adipose tissue with clusters of foamy histiocytes, no malignant cells were found – post traumatic soft tissue cyst- morel lavall'ee Lesion

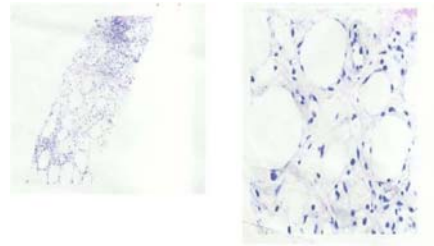


MRI- thigh showed T1 hypointense T2 hyperintense lesion not suppressed in Fat Suppressions TIRM sequences of size 15*2.8 cm noted in postero lateral aspect of Left thigh in subcutaneous plane adjacent to the tensor fascia lata in the trochanteric region features suggestive of Morel Lavall'ee Lesion. Surgical procedure done: complete excision of





Cut section of post traumatic soft cyst specimen



HPE Photo of post-traumatic soft cyst specimen

Chronology: an ovoid, soft, cystic swelling of 15*10 cm over postero-lateral aspect of upper third left thigh involving mid thigh-FNAC showed few mature adipocytes in a haemorrhagic background; no evidence of malignant cells. Bcn cyst [Lt] thigh - complete excision& Biopsy, HPE - reported as non-viable adipose tissue with clusters of foamy histiocytes(haematoxyline& eosin), no malignant cells were found-post traumatic soft tissue cyst-Morel Lavall'ee lesion; post operative period-no recurrence was found in the last 10 months period of follow up.

Discussion:

It was first described by the French Surgeon Victor-Auguste-Francis- Morel - Lavall'ee in 1848; it is defined as a closed soft tissue injury produced by degloving which results in formation of a cavity between the subcutaneous tissue and the muscular fascia or a haemo-lymphatic mass located between hypodermis and the aponeurotic planes; though it is a well-known entity, Morel Lavall'ee Lesion is rarely mentioned in literature. It is also known as Morel-Lavall'ee syndrome, posttraumatic pseudo cyst,

posttraumatic extravasation, Morel-Lavallée effusion or Morel-Lavallée seroma Etiopathogenesis- the most common mechanism of injury is direct trauma with tangential impact followed by the shearing of the hypodermis from the underlying fascia, which results in a cavity filled with blood, lymph and both viable & necrotic tissues. It's common location are along the greater trochanter(hip), gluteal region, lower lumbar area following trauma & other regions abdominal wall after liposuction, abdominoplasty and scapula. But the most frequent localization is the greater trochanter. it has been reported to found these lesion seldom in the calf, knee or thigh. the collection in the cavity of post traumatic soft tissue cyst may spontaneously resolve, or become encapsulated and persistent. Clinically it presents as swelling with local pain and stiffness of the underlying muscle with slow progressing evolution following after traumatic event; there would be soft fluctuant swelling with or without skin discoloration and skin is mobile with normal skin sensation. In 2/3 cases hours to days after the inciting trauma; in 1/3 cases swelling present months or year after the initial trauma; it is associated with underlying bony fracture.it's important to emphasize that absence of a traumatic event in the history of the case [especially in children, elderly and mentally challenged individuals] does not exclude the diagnosis of Morel- Lavall'ee lesion. **Imaging:** plain radiography- non calcified soft tissue mass typically oval or fusiform in shape adherent to the underlying fascia;

Ultrasound -nonspecific & variable, anechoic or hypoechoic, however internal debris, including fat globules can give rise to echogenic foci or fluid fluid levels. A capsule of variable thickness may be seen;

CT- fluid-fluid levels(sedimentation of the hemolymphatic fluid), internal debris including internal fat lobules, peripheral capsule;

MRI- MRI is the imaging modality of choice. It is able to clearly determine the relationship of the collection with the underlying fascia. the fluid is of variable signal intensity depending on make up and may even show a fluid-fluid level. Five types Type I lesions :

laminar shaped, seroma-like with decreased T1 and increased T2 signal; occasionally had a capsule and did not enhance Type II lesions :

oval shaped and looked like a subacute hematoma with increased T1 and T2 signal; had a thick capsule and variable enhancement Type iii lesions-oval shaped, appearance of a chronic organized hematoma with intermediate T1 and heterogeneous T2 signal;thick capsule with internal/peripheral enhancement. Type iv lesions linear shaped, closed laceration with hypo intense T1 signal and hyper intense T2 signal; no capsule with variable enhancement. Type v lesions-pseudo nodular with a round shape, variable T1 and T2 signal, a thin or thick capsule, and had internal/peripheral enhancement.

Treatment:

conservative treatment- for small acute lesions not developed capsule, percutaneous drainage and compression therapy.

surgical treatment- for the established & encapsulated, large, chronic Morel-Lavall'ee lesion- 1. serial percutaneous aspiration & suction drainage, talc or doxycycline sclerodesis,

2. complete excision of the swelling with or without subcutaneous fascial suture to obliterate the dead space (in an attempt to prevent the reaccumulation) **Conclusion:**

Post traumatic soft tissue cyst-Morel Lavall'ee lesion- one of the rarely mentioned entity in literature- should also be included in

Differential Diagnosis of Benign Soft Cystic Swelling at the sites of direct trauma with tangential impact. MRI is the Imaging modality of choice in such lesions; Established Capsule in MRI is used to select Surgery over Conservative line of management.

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