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# Retroperitoneal Liposarcoma Presenting as Right Inguinal Hernia - A Rare Entity

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## ABSTRACT

**Background:** The purpose of this case report is to highlight a rare entity of retroperitoneal liposarcoma presenting as inguinal hernia. Difficulty in preoperative diagnosis, surgical management & outcome are discussed. Pitfalls in diagnosis and management are also highlighted. **Introduction:** Inguinal hernia is a common condition with the majority of patients presenting in the surgical outpatient department. Retroperitoneal sarcoma projecting through the groin is very rare. In literature only 10 cases have been published over the last 30 years. **Case Presentation:** Middle age person presented in OPD with complaint of right Inguinal swelling for 1 & ½ years. He was diagnosed with right inguinal hernia. On exploration there was a huge mass communicating to retroperitoneum. Laparotomy was done & mass excised. On histopathology it was revealed to be liposarcoma. **Conclusion:** Sometime history, clinical examination and even investigations can be misleading but if inguinal hernia is large, growing slowly, non-reducible then retroperitoneal tumor must be ruled out carefully in differential diagnosis of hernia by extended preoperative workup.

*Keywords:* *Inguinal hernia, Liposarcoma, Retroperitoneal.*

## BACKGROUND

Liposarcoma (LPS), a tumor derived from adipocytic differentiated primitive mesenchymal cells, accounts for 10% of all soft tissue sarcomas and for 15% of all sarcomas.[1] It predominantly presents in the extremities. However, it has also been reported in stomach, esophagus and descending colon. Presentation of liposarcoma in the retroperitoneum is rare and very little data is available in the literature. Retroperitoneal liposarcoma can have various presentations but very few cases have been reported so far of a retroperitoneal liposarcoma presenting as an inguinal hernia.[2,3]

## CASE PRESENTATION

Shahzad, a 40-year-old married male, tailor by profession, came to the outpatient department of surgical unit-III with a complaint of swelling in the right inguinal region for 1&1/2 years, on 4th of August, 2021. He first noticed the swelling one and a half years ago that had gradually increased in size over the months. The swelling slightly increased on exerting or coughing, and slightly reduced in size on lying down, but it never disappeared & was not associated with fever (low or high grade), night sweats, discharge or weight loss. However, some skin discoloration was observed. No associated history of lifting heavy weights no, chronic cough, hesitancy, frequency, post-stream dribbling of urine, night trips to the toilet or feeling of incomplete voiding of urine was present. No similar swelling on the contra-lateral side, or any swelling at any other site in the body was seen. No comorbidities; DM HTN Hepatitis/CLD. In personal history, the patient was a smoker, a Tailor by profession, with normal sleep/appetite/bowel or bladder habits. There was a significant history of prolonged hospital admission, or prolonged intake of medication for any disease.

**General Physical Examination:** A middle aged, average built man, with central obesity and slight discomfort on the face while sitting on the couch, with no signs of Pallor, yellowing of the sclera, clubbing of fingers, pedal Edema

or palpable lymph nodes. The Vitals were blood pressure-130/80 mm Hg, Pulse-84 bpm, regular, good volume, respiratory rate-16 breaths/min, temperature-Afebrile.

**Local Examination:** Elongated, swelling in the right inguinal region, about 16X10 cms with discolored overlying skin, reaching the base of the scrotum. Non-Tender, of a temperature comparable to surrounding skin. It was not possible to "reach above the swelling", Cough Impulse was expansile. Percussion note over the swelling was dull. (Some part of the right testis could be felt, buried in the distal part of the swelling). The swelling was irreducible, and no "gut sounds" could be heard on auscultation of the swelling. The contra-lateral side was unremarkable, rest of the hernial orifices were intact.

**Systemic Examination:** Gastro-Intestinal system: Gaseous abdomen, with central obesity, which was soft and nontender; audible bowel sounds. Slightly poor oral hygiene, no per-anal pathology. Central Nervous System: Grossly Intact. Respiratory System: Normal Vesicular Breathing, with bilateral equal air entry and no added sounds. Cardiovascular System: Audible first and second heart sounds with no added sound.

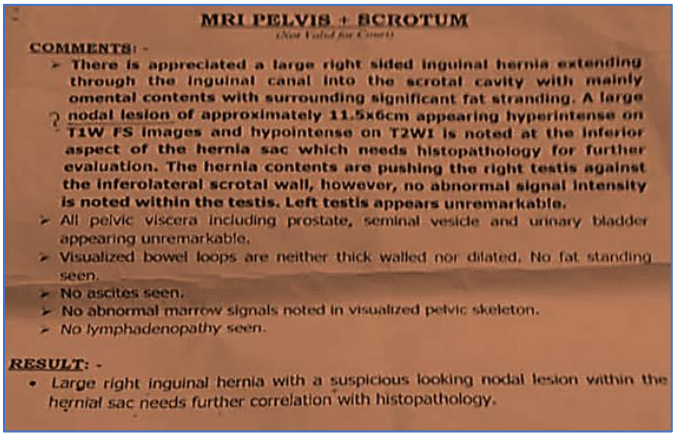
**Preoperative Diagnosis:** Diagnosis of a "Right sided, complete, irreducible, inguinal hernia containing omentum" was made, and the patient was put on the Elective list for hernioplasty.

**Investigations:** Preoperative MRI pelvis & scrotum: There is large right sided inguinal hernia extending through the inguinal canal into scrotal cavity with mainly omental contents with significant surrounding fat strandings. A large nodal lesion of approximately 11.5 × 6 cm appearing hyperintense on T1W FS image & hypointense on T2W1 is noted as an inferior aspect of the hernial sac. The herniated sacs are pushing right testes against the inferolateral scrotal wall. No abnormal signal intensity noted within testes. Left testes unremarkable. Final conclusion was a Large right inguinal hernia with suspicious looking nodal mass within hernial sac. His fitness profile was complete, so he was admitted in ward.

**Per-operative Findings:** On opening the inguinal canal definite hernial sac could not be identified. Cord contents were pushed anteriorly. Posterior wall of the inguinal canal was completely occupied by a diffuse, firm lipomatous mass, which did not reduce even after sectioning of the superficial inguinal ring. Since the mass was extending superiorly, we suspected a retroperitoneal lipoma. Midline laparotomy was carried out. Three giant retroperitoneal diffuse lipomatous masses measuring 6 × 2 × 2, 2 × 1.4 × 6 cms and 2.4 × 1.2 × 8 cms in size were found. A 20 × 14 × 6 soft-tissue mass, to the right of the midline, separate from the right kidney, ureter, vena cava, and gonadal vessels. A 60 × 20 × 20 soft tissue mass extending over the left side of the retroperitoneum, with origin around the mesentery of sigmoid colon, was extending through the right inguinal canal, into the scrotum forming the contents of the hernia, surrounding the spermatic cord, and burying the right testis, distally. Another 24 × 12 × 8 cm mass seemed to be attached to the peritoneum near the pelvis. The Mass contained multiple cystic and solid, and necrotic areas.

**Procedure:** Masses noted as mass 1 and 2 were fully resected. Mass noted as mass 2 could only be partially dissected, owing to expansive involvement of surrounding structures; right orchiectomy was also done as mass was not separable from testis and the spermatic cord; Deep ring was closed and posterior wall of inguinal canal was sutured with Inguinal ligament. Tissue specimens were sent for histopathology (Which later proved malignant lipogenic tumor).

**Figure 1: Preoperative MRI**


MRI PELVIS + SCROTUM

COMMENTS: -

- There is appreciated a large right sided inguinal hernia extending through the inguinal canal into the scrotal cavity with mainly omental contents with surrounding significant fat stranding. A large nodal lesion of approximately 11.5x6cm appearing hyperintense on T1W FS images and hypointense on T2WI is noted at the inferior aspect of the hernia sac which needs histopathology for further evaluation. The hernia contents are pushing the right testis against the inferolateral scrotal wall, however, no abnormal signal intensity is noted within the testis. Left testis appears unremarkable.
- All pelvic viscera including prostate, seminal vesicle and urinary bladder appearing unremarkable.
- Visualized bowel loops are neither thick walled nor dilated. No fat standing seen.
- No ascites seen.
- No abnormal marrow signals noted in visualized pelvic skeleton.
- No lymphadenopathy seen.

RESULT: -

- Large right inguinal hernia with a suspicious looking nodal lesion within the hernial sac needs further correlation with histopathology.

**Figure 2: Intraoperative Snapshots**

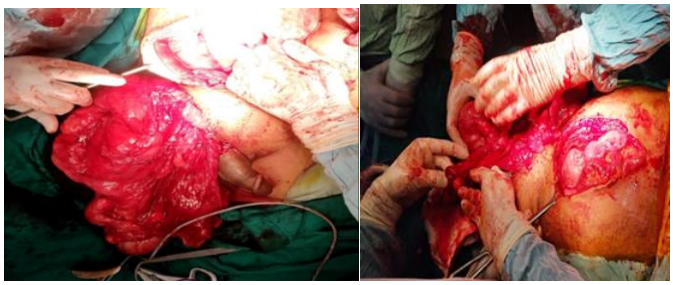


**Figure 3: Specimen**

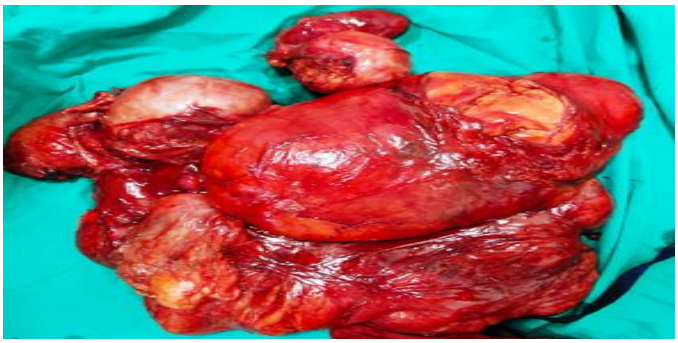


**Figure 4: Post-operative picture of incision site**

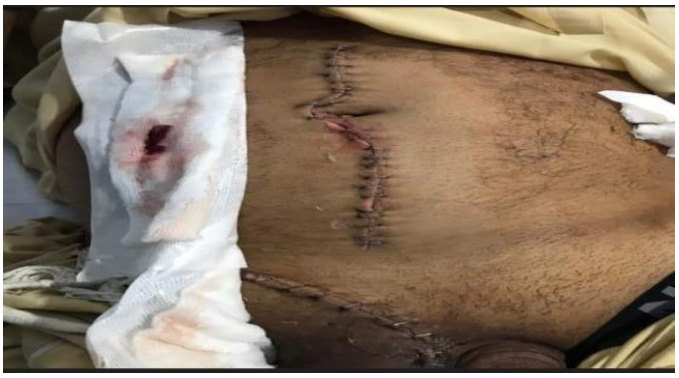
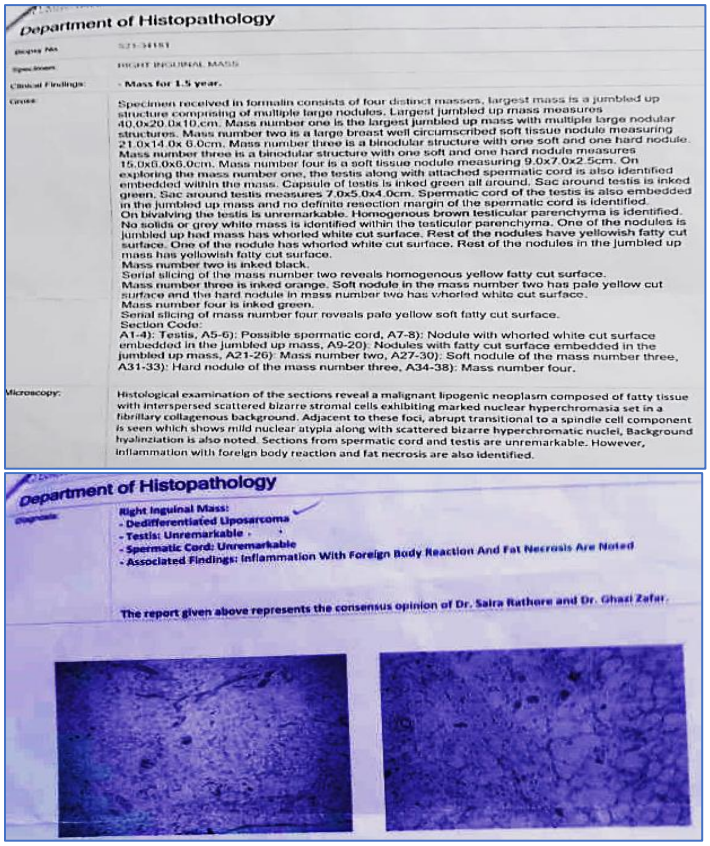


**Figure 5: Postoperative histopathology**



Department of Histopathology

Clinical Findings: - Mass for 1.5 year.

Gross: Specimen received in formalin consists of four distinct masses, largest mass is a jumbled up structure comprising of multiple large nodules. Largest jumbled up mass measures 40.0x20.0x10.cm. Mass number one is the largest jumbled up mass with multiple large nodular structures. Mass number two is a large breast well circumscribed soft tissue nodule measuring 21.0x14.0x 6.0cm. Mass number three is a binodular structure with one soft and one hard nodule. Mass number three is a binodular structure with one soft and one hard nodule measures 15.0x6.0x6.0cm. Mass number four is a soft tissue nodule measuring 9.0x7.0x2.5cm. On exploring the mass number one, the testis along with attached spermatic cord is also identified embedded within the mass. Capsule of testis is inked green all around. Sac around testis is inked green. Sac around testis measures 7.0x5.0x4.0cm. Spermatic cord of the testis is also embedded in the jumbled up mass and no definite resection margin of the spermatic cord is identified. On bivalving the testis is unremarkable. Homogenous brown testicular parenchyma is identified. No solids or grey white mass is identified within the testicular parenchyma. One of the nodules is jumbled up hard mass has whorled white cut surface. Rest of the nodules have yellowish fatty cut surface. One of the nodule has whorled white cut surface. Rest of the nodules in the jumbled up mass has yellowish fatty cut surface.
Mass number two is inked black.
Serial slicing of the mass number two reveals homogenous yellow fatty cut surface.
Mass number three is inked orange. Soft nodule in the mass number two has pale yellow cut surface and the hard nodule in mass number two has whorled white cut surface.
Mass number four is inked green.
Serial slicing of mass number four reveals pale yellow soft fatty cut surface.
Section Code:
A1-4): Testis, A5-6): Possible spermatic cord, A7-8): Nodule with whorled white cut surface embedded in the jumbled up mass, A9-20): Nodules with fatty cut surface embedded in the jumbled up mass, A21-26): Mass number two, A27-30): Soft nodule of the mass number three, A31-33): Hard nodule of the mass number three, A34-38): Mass number four.

Microscopy: Histological examination of the sections reveal a malignant lipogenic neoplasm composed of fatty tissue with interspersed scattered bizarre stromal cells exhibiting marked nuclear hyperchromasia set in a fibrillary collagenous background. Adjacent to these foci, abrupt transitional to a spindle cell component is seen which shows mild nuclear atypia along with scattered bizarre hyperchromatic nuclei. Background hyalinization is also noted. Sections from spermatic cord and testis are unremarkable. However, inflammation with foreign body reaction and fat necrosis are also identified.



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Diagnosis: Right Inguinal Mass:
- Dedifferentiated Liposarcoma
- Testis: Unremarkable
- Spermatic Cord: Unremarkable
- Associated Findings: Inflammation With Foreign Body Reaction And Fat Necrosis Are Noted

The report given above represents the consensus opinion of Dr. Saira Rathore and Dr. Ghazi Zafar.

## DISCUSSION

Inguinal hernia is a very common pathology and surgery is commonly performed worldwide. It is often considered a minor procedure. Diagnosis of hernia is purely clinical. This is a fact that poses great risk of ignoring underlying pathology such as a retroperitoneal tumor presenting as a huge inguinal hernia. Inguinal liposarcoma can originate from different sites: Fatty tissue of the groin, para-testicular fatty tissue, omental tissue within a hernia sac,3 the spermatic cord and retroperitoneal tissue that protrudes though the inguinal canal; the latter constellation is exceedingly rare.[5,6] Liposarcoma is a rare tumor and is found commonly in extremities, usually thigh and retroperitoneum. It is slow growing and because there is no barrier in the peritoneum it is difficult to recognize and usually becomes very large at the time of surgery. Because retroperitoneal space communicates with the pelvis and inguinal region, retroperitoneal tumors tend to grow in these sites. Gonadal vessels pathway serves as an association between retroperitoneal space & inguinal region. Finally, the deep inguinal ring and contents of the inguinal canal provide a potential doorway. Author found only a few cases in literature mentioning retroperitoneal tumor presenting as swelling in the inguinal region. An irreducible, painless & hard mass presenting as inguinal hernia should raise suspicion of retroperitoneal tumor.

In our case preoperative diagnosis of inguinal hernia was made. MRI Pelvis & perineum was obtained preoperatively because of a different presentation of swelling but it was reported to be inguinal hernia by the radiology department with no connection with retroperitoneum. So, hernia surgery was planned and executed as in routine but later on once it was not possible to reduce contents back into the cavity and swelling was found to be very large midline approach was used to locate and excise the pathology.

## CONCLUSION

Sometime history, clinical examination and even investigations can be misleading but if inguinal hernia is large, growing slowly, non-reducible then retroperitoneal tumor must be ruled out carefully in differential diagnosis of hernia by extended preoperative workup.

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