

Retroperitoneal liposarcoma presenting as inguinoscrotal mass

İnguinoskrotal kitle ile ortaya çıkan retroperitoneal liposarkom

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Abstract

Liposarcoma is one of the most common soft tissue sarcomas. About 20% of liposarcomas originate in the retroperitoneum. It manifests as painless, slowly enlarging soft tissue mass. Inguinal region is one of the uncommon locations for liposarcoma, the tumor arising from the spermatic cord. In this location, liposarcoma needs to be differentiated from other more common pathologies in the canal including hernia. Very rarely retroperitoneal liposarcoma may manifest as inguinal hernia. We describe a case of a 60-year-old man who presented with left inguinoscrotal mass that was demonstrated to be solid enhancing soft tissue attenuation mass with small areas of fat inside on multidetector-row computed tomography (MDCT). Coronal reformatted CT revealed dumbbell shape of the mass with larger retroperitoneal component contiguous with smaller left paratesticular component across a narrow segment in the inguinal canal. Patient was operated and a large retroperitoneal mass was removed. Histopathology of the resected mass revealed a dedifferentiated liposarcoma. Thus, firm, non-tender and large irreducible inguinoscrotal swelling in an adult should be evaluated by CT to rule out a rare inguinal extension of retroperitoneal liposarcoma. MDCT, besides revealing the diagnosis can determine the true intra-abdominal (retroperitoneal) extent of such a dumbbell shaped tumor when only tip of iceberg is visible in the inguinal region.

Key words: Inguinal canal; inguinoscrotal mass; liposarcoma; multidetector-row computed tomography; retroperitoneum.

Özet

Liposarkom en sık yumuşak doku sarkomlarından birisidir. Liposarkomların %20'si retroperitondan kaynaklanır. Klinik olarak ağrısız, yavaş büyüyen yumuşak doku kitlesi olarak görülür. İnguinal bölge spermatik kord kaynaklı liposarkomlar için ender rastlanan bir lokalizasyondur. Bu yerleşimde liposarkomun kanalda görülebilen herni dahil diğer daha sık patolojilerden ayırt edilmesi gerekir. Burada sol inguinoskrotal kitle ile başvuran ve çok-kesitli bilgisayarlı tomografi (ÇKBT) ile küçük yağ bölgeleri içeren solid yumuşak doku kitlesi olduğu gösterilen 60 yaşında erkek hastayı sunuyoruz. Koronal reformat BT'de büyük retroperitoneal komponenti olan ve inguinal kanalda dar bir segment ile daha küçük sol paratestiküler bölüm ile devamlılık gösteren kum saati şeklinde kitle görüldü. Hasta opere edildi ve büyük retroperitoneal kitle çıkarıldı. Çıkarılan kitlenin histopatolojisi dediferansiye liposarkom olarak raporlandı. Yetişkinlerde sınırları keskin, katı, hassas olmayan, büyük ve inmeyen inguinoskrotal kitleler ender olarak görülebilecek retroperitoneal sarkomun inguinal uzantısını dışlamak için BT ile değerlendirilmelidir. ÇKBT, tanıyı belirleme yanında, inguina bölgesinde sadece buzulun tepesinin görüldüğü kum saati şekilli kitlenin gerçek karın içi (retroperitoneal) yayılımını belirleyebilir.

Anahtar sözcükler: Çok-kesitli bilgisayarlı tomografi; inguinal kanal; inguinoskrotal kitle; liposarkom; retroperitoneum.

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Liposarcoma is one of the most common soft tissue sarcomas. About 20% of liposarcomas originate in the retroperitoneum. It manifests as painless, slowly enlarging soft tissue mass.^[1] Inguinal region is one of the uncommon locations for liposarcoma, the tumor arising from the spermatic cord.^[2] Here liposarcoma needs to be differentiated from other

more common pathologies in the canal including hernia.^[2,3] Very rarely retroperitoneal liposarcoma may manifest as inguinal hernia.^[4-6] We describe a case of left inguinoscrotal mass that on multidetector-row computed tomography (MRCT) was demonstrated to be solid enhancing soft tissue attenuation mass with areas of fat inside. Coronal reformatted computed

tomography (CT) revealed dumbbell shape of the mass with larger retroperitoneal component contiguous with smaller left paratesticular component across a narrow segment in the inguinal canal.

Case report

A 60-year-old man presented with history of slowly enlarging painless left inguinoscrotal swelling for the last 5 years. He had presented 3 years before with similar complaints with smaller swelling, which was diagnosed as inguinal hernia then. Repair of left indirect inguinal hernia was advised, but the patient refused at that time. Local examination of the patient this time revealed a large firm swelling in the left inguinal region and scrotum. The swelling was non-tender and not reducible into the abdomen. Diffuse bulge was present in the left lumbar region. There was no other significant medical history; general physical examination was unremarkable. CT scan was performed with 64 slice MDCT to determine the exact nature of left inguinoscrotal mass. Transverse CT revealed a large retroperitoneal mass in the abdomen anterior to aorta and inferior vena cava displacing gut coils towards right. Mass showed predominant soft tissue attenuation with small areas of fat density and focal linear calcification in it (Fig. 1). Sagittal reformatted CT

showed the entire cranio-caudal extent of the mass with larger superior retroperitoneal component and smaller inferior left scrotal component (Fig. 2). Mass had predominant soft tissue attenuation with smaller areas of fat attenuation inside. Hydronephrosis of left kidney was present due to compression of left ureter by the mass (Fig. 2). Coronal reformatted CT demonstrated contiguity of the larger retroperitoneal mass with the paratesticular mass across a narrow component through the inguinal canal giving dumb-bell appearance to the mass (Fig. 3). A diagnosis of retroperitoneal liposarcoma possibly dedifferentiated type extending along left inguinal canal was made on the basis of CT findings. Patient was operated and a large retroperitoneal mass was resected; inguinal component of mass was found inseparable from the spermatic cord and attached to left testis. Left orchidectomy was performed. Histopathologic examination revealed a dedifferentiated liposarcoma.

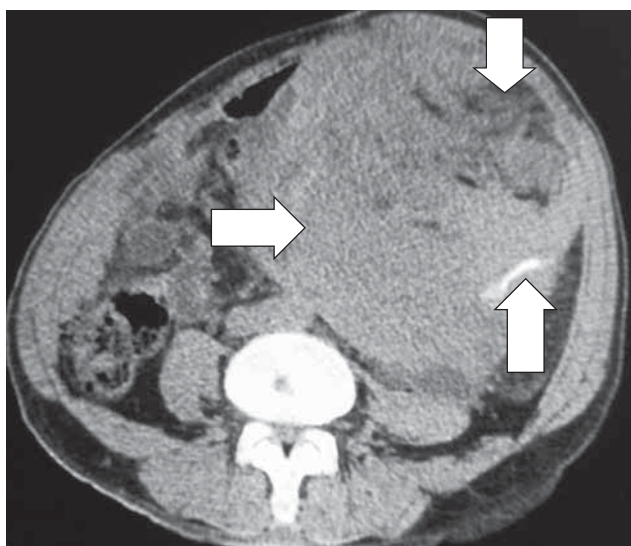


Figure 1

Non-contrast transverse CT image showing a large retroperitoneal mass displacing gut towards right. Mass shows predominant soft tissue attenuation (rightward arrow) with large areas of fat (downward arrow), and linear focal calcification (upward arrow).

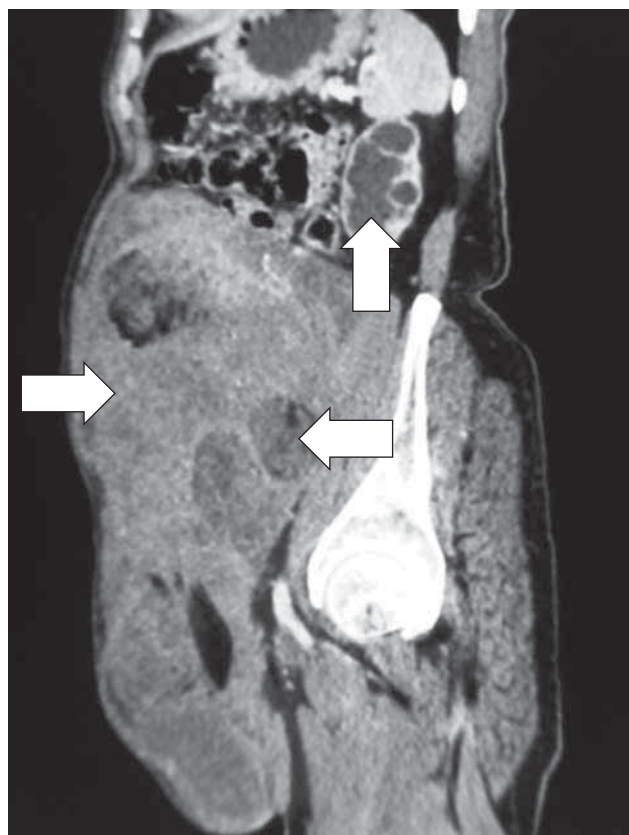


Figure 2

Sagittal reformatted contrast enhanced CT showing whole extent of the mass extending from retroperitoneum into left hemiscrotum. Mass shows enhancing soft tissue attenuation areas with focal fat density inside. Left kidney shows hydronephrosis (arrows).

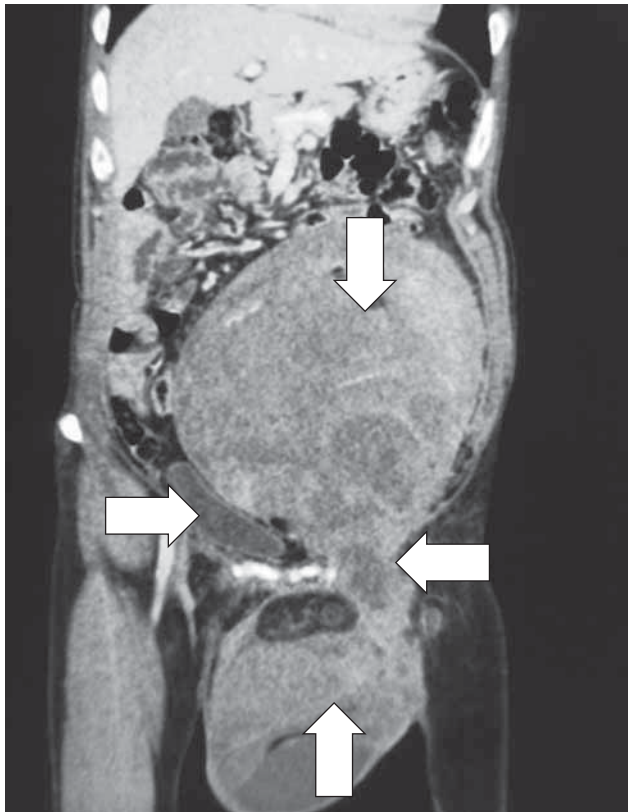


Figure 3

Coronal reformatted CT showing dumbbell shaped mass with a narrow segment in the inguinal canal (leftward arrow) connecting larger superior retroperitoneal component (downward arrow) with the smaller left hemiscrotal component (upward arrow). Urinary bladder is displaced by the mass towards right (rightward arrow).

Patient received postoperative radiotherapy (4000 rads in 6 weeks) and is currently doing well in 6th month of follow-up.

Discussion

Liposarcoma is malignant mesenchymal tumor of adipose tissue. It has four histopathologic subtypes: well-differentiated, myxoid, pleomorphic, and dedifferentiated. Liposarcoma most commonly originates in extremities and retroperitoneum; inguinal region is an uncommon location for liposarcoma.^[1,2,4,7] Inguinal liposarcoma most commonly arises from spermatic cord from where it can spread to pelvis. Inguinal canal also has a communication with the retroperitoneum.^[8] This creates a pathway for extension of retroperitoneal sarcomas into the paratesticular region. Location of the main bulk of tumor in the

retroperitoneum contiguous via a narrowed inguinal canal segment with the smaller scrotal mass giving a dumbbell appearance was compatible with primary retroperitoneal location of the mass with extension into the inguinal region in our case.

Liposarcomas are slowly growing tumors that manifest as painless and slowly enlarging masses that usually in elderly. Large firm mass may be palpable on per-abdomen examination in case of retroperitoneal liposarcoma. Inguino-scrotal liposarcoma arising from spermatic cord or extending from retroperitoneum may be mistaken for a hernia.^[4-7] However firm, non-tender feel of the swelling which is not reducible in a patient without features of intestinal obstruction should alert the surgeon for a possible tumor. Cross-sectional imaging with ultrasonography (US), CT and magnetic resonance imaging (MRI) can determine the nature of swelling and its extent.^[1,3,8,9]

CT helps in preoperative diagnosis of liposarcoma by identifying characteristic attenuation of fat within the retroperitoneal and inguinal mass. The CT attenuation of liposarcoma, specifically the amount of fat in the mass, reflects its histological subtype.^[3,8] As the order of malignancy increases from well-differentiated to dedifferentiated subtypes, liposarcoma contains lesser fat and shows attenuation similar to that of muscle.^[1,9] Well-differentiated liposarcomas show predominant fat attenuation components where as dedifferentiated and myxoid types manifest mainly as soft tissue attenuation masses. Local extension of the tumor as its origin and spread can be determined by CT. MDCT in the whole extent of mass may provide accurate tumor volume measurement.^[9] Possible histological subtype and prognosis can be determined with MDCT thus before surgery. CT is also recommended at regular intervals in the follow up to detect recurrence early.^[9]

Prognosis of retroperitoneal liposarcoma is dependent on size, histological subtype, CT attenuation of the tumor and operability and mode of treatment employed. Distant metastasis may develop particularly in dedifferentiated subtype.^[7,10] Liposarcomas of all types are characterized by local recurrence after surgery; hence wide local resection achieving tumor free margins is recommended.^[7] Extensive dissection may be difficult in large retroperitoneal masses. Radical orchidectomy is recommended

for paratesticular liposarcomas. Radiotherapy and chemotherapy may be effective for the treatment of primary and metastatic masses, however their role is controversial.^[4,6,7] Regular follow-up at intervals of approximately 3 months may allow early detection of a recurrence after surgical tumor removal. This could improve the likelihood of performing a complete resection for patients with recurrent retroperitoneal liposarcoma and hence result in a longer survival time.^[9]

As a conclusion, a firm, non-tender and large irreducible inguinoscrotal swelling in an adult should be evaluated by CT to rule out a rare inguinal extension of retroperitoneal liposarcoma. MDCT, besides revealing the diagnosis, can determine the true intra-abdominal (retroperitoneal) extent of such a dumbbell shaped tumor when only tip of iceberg is visible in the inguinal region.

Conflict of interest

No conflict of interest was declared by the authors.

References

1. Hong SH, Kim KA, Woo OH, Park CM, Kim CH, Kim MJ, et al. Dedifferentiated liposarcoma of retroperitoneum: spectrum of imaging findings in 15 patients. *Clin Imaging* 2010;34:203-10.
2. Schwartz SL, Swierzewski SJ 3rd, Sondak VK, Grossman HB. Liposarcoma of the spermatic cord: report of 6 cases and review of the literature. *J Urol* 1995;153:154-7.
3. Bhosale PR, Patnana M, Viswanathan C, Szklaruk J. The inguinal canal: Anatomy and imaging features of common and uncommon masses. *Radiographics* 2008;28:819-35.
4. Longbotham JH, Joyce RP. Retroperitoneal liposarcoma presenting as spermatic cord tumor. *Urology* 1987;30:276-80.
5. Mizuno Y, Sumi Y, Nachi S, Ito Y, Marui T, Saji S, et al. A case of a large retroperitoneal liposarcoma presenting as an incarcerated inguinal hernia. *Hernia* 2006;10:439-42.
6. Baldassarre E, Santacroce C, Barone M, Torino G, Siani A, Valenti G. Retroperitoneal well-differentiated liposarcoma presenting as an incarcerated inguinal hernia. *G Chir* 2007;28:315-7.
7. Hassan JM, Quisling SV, Melvin WV, Sharp KW. Liposarcoma of the spermatic cord masquerading as an incarcerated inguinal hernia. *Am Surg* 2003;69:163-5.
8. Noguchi H, Naomoto Y, Haisa M, Yamatsuji T, Shigemitsu K, Uetsuka H, et al. Retroperitoneal liposarcoma presenting a indirect inguinal hernia. *Acta Med Okayama* 2001;55:51-4.
9. Kim EY, Kim SJ, Choi D, Lee SJ, Kim SH, Lim HK, et al. Recurrence of retroperitoneal liposarcoma: Imaging findings and growth rates at follow-up CT. *AJR Am J Roentgenol* 2008;191:1841-6.
10. Tateishi U, Hasegawa T, Beppu Y, Satake M, Moriyama N. Primary dedifferentiated liposarcoma of the retroperitoneum. Prognostic significance of computed tomography and magnetic resonance imaging features. *J Comput Assist Tomogr* 2003;27:799-804.

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