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Case report

A case report: Giant intra-abdominal liposarcoma presenting acute renal failure

Kazim Duman [a, *], Mustafa Girgin [b], Gokhan Artas [c]

[a] Department of General Surgery, Elazig Training and Research Hospital, 23200, Elazig, Turkey
[b] Department of General Surgery, Faculty of Medicine, Firat University, 23200, Elazig, Turkey
[c] Department of Pathology, Faculty of Medicine, Firat University, 23200, Elazig, Turkey

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ABSTRACT

Introduction: Liposarcomas represent 20–30% of adult soft tissue tumors and its abdominal localization occurs only in 5% of cases. Most are asymptomatic, but few present with abdominal mass and pain, fatigue, nausea, vomiting. They infiltrate adjacent organs and cause intestinal obstruction, intestinal ischemia-perforation, hydronephrosis, ureteric fistula and even aortic rupture. Here we aimed to report a rare case of a giant liposarcoma which originated from mesentery.

Presentation of case: A 45-year-old male presented with slightly abdomen distention, urinary retention, oliguria since fifteen days. There was no concomitant nausea, vomiting and lower extremity edema. We found renal function tests abnormal. Contrast-enhanced computed tomography (CT) demonstrated a 20 × 18 cm, well-circumscribed, lobulated, heterogeneous mass. Both ureters were compressed by the mass. The entire mass was totally excised. After the operation, the patient's renal function returned to normal levels dramatically. The tumor was diagnosed as dedifferentiated liposarcoma.

Discussion: In cases of intra-abdominal mass is detected, surely abdominal compartment syndrome (ACS) should be considered. If vital signs, pulmonary function tests (PFT) and value of the CVP are abnormal, intra-abdominal pressure should be measured. Our findings mentioned above were not observed.

Conclusion: A detailed history should be obtained other abdominal solid organs should also be considered while performing a careful physical examination, the amount of urinary output in particular should be questioned and this sytemic questioning should be supported by specific laboratory tests.

1. Introduction

Liposarcomas represent 20–30% of adult soft tissue tumors and its abdominal localization occurs only in 5% of cases [1]. Most are asymptomatic, but few present with abdominal mass and pain, fatigue, nausea, vomiting [2]. They infiltrate adjacent organs and cause intestinal obstruction, ischemia and perforation, hydronephrosis, ureteric fistula and even aortic rupture [3]. We aimed to report a rare case of a giant liposarcoma which originated from mesentery. It caused deterioration in renal function and oliguria. This symptoms are extremely rare. The final diagnosis was established by pathological examination and immunohistochemical study after an totally excision of the tumor.

2. Presentation of case

A 45-year-old male presented with slight abdomen distention, urinary retention, oliguria since fifteen days. No significant personal or familial medical history of previous abdominal surgery, intestinal polyposis and acute or chronic renal failure. The blood pressure was 135/85 mmHg, the pulse 80 beats/minute, and the temperature 37 °C. Abdominal physical examination revealed no tenderness and rebound, nontender intra-abdominal mass measuring around 20 × 15 cm in size, with intrinsic mobility, its borders were slightly circumscribed between supra pubic and umblical regions. There were no nausea, vomiting and lower extremity edema.

Routine blood and hemogram results, cancer antigen 19-9, carcinoembryonic antigen, alpha fetoprotein, beta human chorionic gonadotropin levels, liver function tests were normal, but the renal function tests abnormal (Blood urea nitrogen: 34 mg/dL,

* Corresponding author. Tel.: +90 538 385 9511.
E-mail address: drkduman@gmail.com (K. Duman).

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Creatinine: 2.2 mg/dL, Urea: 73 mg/dL, Creatinine clearance: 34 ml/minute).

Abdominal ultrasound (USG) display a giant mass in the abdomen which the nature is unknown origin. Contrast-enhanced computed tomography (CT) demonstrated a 20 × 18 cm, well-circumscribed, lobulated, heterogeneous mass, extending from L3- L5 to posterior part of abdominal wall, was noted in the abdominal cavity. Both ureters were compressed by the mass (Fig. 1).

Exploratory laparotomy was performed and a giant mass originating from the mesentery was discovered. The mass was partly surrounded by greater omentum, and tightly adhered to the small bowel, ureters and urinary bladder. The Entire mass was totally excised and mesentery repaired. The removed mass was solitary, measured 23 × 16 × 15 cm in size and approximately 4000 g. in weight (Fig. 2). Immediately after the operation, the patient's renal function returned to normal levels dramatically (Blood urea nitrogen: 20 mg/dL, Creatinine: 1.2 mg/dL, Urea: 42 mg/dL, Creatinine clearance: 70 ml/minute). Postoperative period was uneventful and there were no any postoperative complications.

Pathological examination revealed a tumor composed of atypical cells with narrow cytoplasm and a bizarre nucleus in certain places (Fig. 3a). Of the mesenchymal markers in the immunohistochemical staining applied to these areas, vimentin was observed to be positive, and of the epithelial markers, pancytoceratine was observed to be negative. In the focal areas, areas of well-differentiated liposarcomas were observed. S100 was found as positive in these areas (Fig. 3b). In light of these findings, the case was reported as dedifferentiated liposarcoma.

3. Discussion

Areas where liposarcomas are most frequently seen are the retroperitoneal (45%), extremities (24%), inguinal, gluteal and popliteal (rare) regions. Often the get noticed when they get bigger and they rarely reach giant sizes. Cases that have reached giant size and originating from the omentum are rare to non-existant in literature [4]. The intra-abdominal localization is rare. (2). First mesenteric liposarcomas was presented in 1946 as a recurrent liposarcoma of the transverse mesocolon. Then, various cases have been reported [5]. The largest case of liposarcoma to have been published was identified as a retroperitoneal liposarcoma weighing 23 kg and 47 × 40 cm in size, but did not cause any signs of pressure or complaints thereof [6]. Despite being about half the size of this tumor, our case has put pressure on both ureters and brought our patient to renal failure.

Our case did not describe any nausea, vomiting, abdominal distension or abdominal pain but instead had decreased urine output and came to our clinic with complaints of abdominal swelling with indefinable borders. It was ascertained that the patient had gone into renal failure, a differential diagnosis was made for the mass using abdominal USG and CT and surrounding vascular tissue was checked in particular. A renal pathology was not detected. In light of these findings, en bloc resection was performed on the patient and it was observed that the patient's renal function tests had normalized after the surgical resection.

According to The World Health Organization's (WHO) classification of tumors, liposarcomas are divided into 5 groups, namely well differentiated (45%), dedifferentiated (20%), pleomorphic (10%), round cell (5%) and myxoid type (rare). It has been found that most giant liposarcomas have been observed as dedifferentiated subtypes [5,6]. The histological subtypes of tumors vary greatly in the clinical course and prognosis. Dedifferentiated, round cell and pleomorphic tumors are known to follow a more aggressive course [7]. Tumor size (>20 cm), histological subtype and tumor dissemination are considered among important prognostic factors [8].

It is clear from literature that liposarcomas do not discriminate between genders and can be seen in all age groups. They are often seen between 50 and 70 years of age [9]. It presents with symptoms of abdominal distension, abdominal pain, nausea, vomiting and a palpable mass and when these symptoms are observed its location is tried to be determined using magnetic resonance (MR) and CT, leading up to differential diagnosis. Mesenteric liposarcomas present images of heterogeneous, encapsulated, non-lipogenic masses which are their characteristic CT and MR findings. For this reason, needle biopsies are not needed [10,11].

Furthermore, in cases of intra-abdominal mass is detected, surely abdominal compartment syndrome (ACS) should be considered. If vital signs, pulmonary function tests (PFT) and value of the CVP are abnormal, intra-abdominal pressure should be measured. In our case, these findings mentioned above were not observed. Nevertheless, so as to rule out the abdominal compartment syndrome, preoperative and postoperative intra-bladder pressure were measured 20 cm H2O and 10 cm H2O respectively by foley catheter monitoring. Arterial blood gas interpretation remained in the normal range during follow-up period (Arterial Blood PH: 7.42, PCO2: 40 mmHg, PO2: 90 mmHg).

The main subject of the treatment is the en bloc removal of the

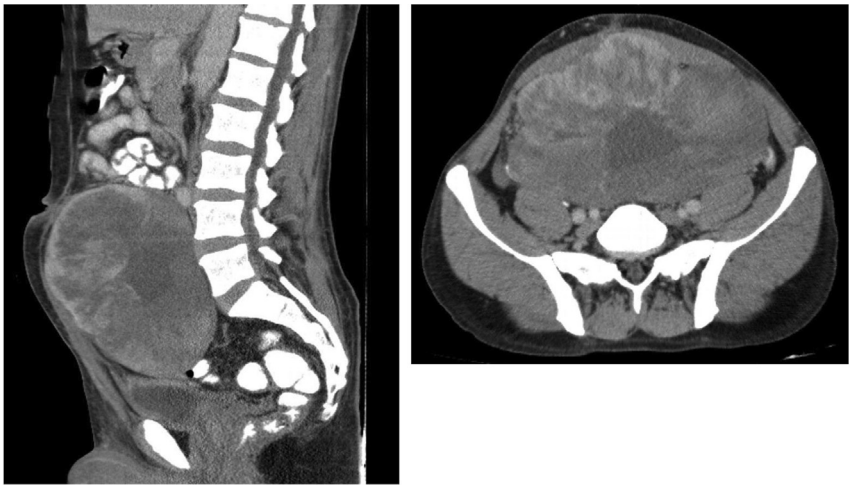

Fig. 1. Contrast-enhanced computed tomography (CT) demonstrated a 20 × 18 cm, well-circumscribed, lobulated, heterogeneous mass, extending from L3-L5 to posterior part of abdominal wall.

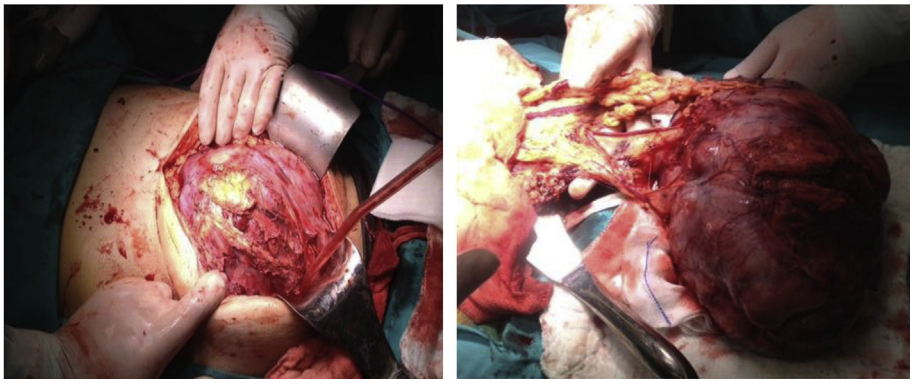

Fig. 2. The removed mass solitary, measured 23 × 16 × 15 cm in size and approximately 4000 g. in weight.

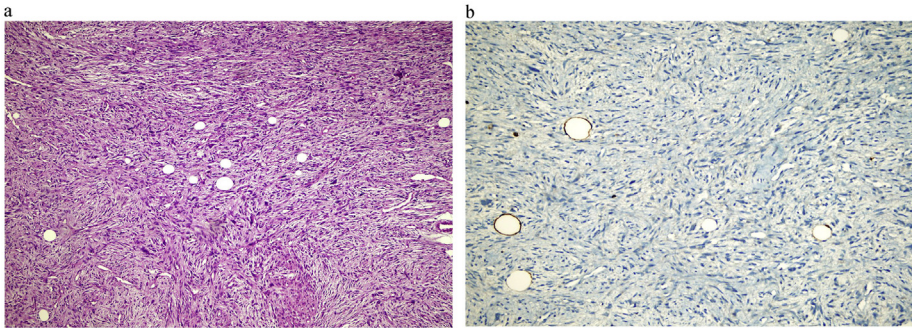

Fig. 3. a. High-grade non lipogenic sarcoma areas together well-differentiated liposarcoma areas (Hematoxylin and eosin x100). **b**. S100 positivity in well-differentiated liposarcoma area. (Immunoperoxidase x200).

mass while achieving a clear surgical margin. Adjuvant radiotherapy and chemotherapy are used in patients in whom clear surgical margins have not been attained. The role of adjuvant chemotherapy in treatment has not been clarified [5,12,13]. It has been reported in literature that even a liposarcoma located in the 2nd and 3rd parts of the duodenum has been able to be resected en bloc with a successful pylorus preserving pancreaticoduodenectomy [14]. Our patient who has an abdominal liposarcoma that according to literature has a 30% mortality and 50% recurrence rate, a survival period reported as 6–20 years based on prognostic factors and a follow-up requirement of 5 years has been under observation with no problems for about 1 year [5,15]. The five year survival rate in all the different types of liposarcoma is of 10%; however it is very weak in the undifferentiated types [2].

4. Conclusion

Abdominal liposarcoma cases have been published in literature and it was found that nearly all of them presented with symptoms of distension and gastrointestinal complaints due to pressure on the intestinal loops. As in our case, in patients who do not show these symptoms, a good history should be obtained, other abdominal solid organs should also be considered while performing a careful physical examination, the amount of urinary output in particular should be questioned and this sytemic questioning should be supported by biochemical analyses.

Ethical approval

Fırat University Ethical Commitee- 2016/case report.

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Author contribution

Kazim Duman: Study design, writing.
Mustafa Girgin: Data collections, data analysis.
Gokhan Artas: Data collections, data analysis.

Conflicts of interest

There is no conflict of interest.

Guarantor

Kazim Duman: Study design, writing.
Mustafa Girgin: Data collections, data analysis.
Gokhan Artas: Data collections, data analysis.

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