

CASE REPORT

Giant abdominal lipofibroma – case presentation

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Abstract

Abdominal lipomas are benign mesenchymal tumors of mature fatty tissue that may appear at any age. We present the case of a 58-year-old patient with a cardiovascular pathology, who presented with diffuse abdominal pains, asthenia, anterior thorax pains and palpitations, abdomen increase, symptoms that had an insidious onset. The clinical and imagistic examinations suggested the diagnosis of giant abdominal lipoma. The surgical intervention allowed the excision of an encapsulated tumor, of 250/220/230 mm, relatively well encapsulated, with a macroscopic aspect of section adipose tissue, with hard whitish areas, with a 12.3 kg weight. The histopathological examination confirmed the diagnosis of lipofibroma.

Keywords: lipofibroma, abdomen, computed tomography, abdominal pains.

Introduction

Lipoma is the most frequent mesenchymal tumor, with a maximum incidence in the 5th and 6th life decade. The tumor may be superficial (subcutaneous) or deep (retroperitoneum, thoracic wall, hands, legs). Less than 10% of lipomas are multifocal [1–4]. Mesenteric lipomas do not cause intestinal symptoms in most cases, as these usually allow the passage of the intestinal content [1, 5], while the ones that cause abdominal pains represent a small percentage [2, 6]. Mesenteric lipomas may cause abdominal pains due to a complete intestinal obstruction because of the torsion or volvulus [3, 7–10] or due to a partial intestinal obstruction associated with the intestine compression.

We present the case of a patient presenting a giant abdominal lipofibroma, insidiously developed without any specific symptoms of the digestive tract.

Case presentation

The patient M.A., male, aged 58 years, known with a cardiac pathology (essential high blood pressure, heart ischemic disease, permanent atrial fibrillation), in an ambulatory chronic treatment with beta-blockants, tonicardiatics, inhibitors of the angiotensin converting enzyme, was admitted to the Clinic of Chronic Diseases, Railway General Hospital of Sibiu, Romania, between May 3–6, 2016, for diffuse abdominal pains, abdomen increase, asthenia, anterior thorax pains, palpitations, symptoms with an insidious onset and intensified in the last 20–25 days.

The clinical examination at admission revealed a slightly altered health state, afebrile, with a well-represented subcutaneous tissue, pains at cervical and lumbar

spine percussion, enhanced transversal heart dullness area, unregulated, abnormal heart sounds, with a pulse deficit, blood pressure (BP) 115/75 mmHg, ventricular pulse (VP) 98 beats/min., with arrhythmic heart sounds (atrial fibrillation), high volume abdomen (Figure 1). In the right hypochondrium, there could be palpated a tumor, with a high consistency, unevenly demarcated, extending towards the epigastrium, comprising the entire upper abdominal part. The abdomen was diffusely sensitive at palpation, the liver and spleen could not be clinically evaluated due to the tumor presence.



Figure 1 – The patient's volume distended abdomen, before surgery. Side face image.

Laboratory tests highlighted a slightly high alanine-aminotransferase (ALT) (45.2 U/L), hyperuricemia (8 mg/dL), hypocalcemia (8.5 mg/dL), low sideremia (30 mg/dL), inferior limit hematocrit (39.6%), and superior limit urea (49.2 mg/dL). Taking into consideration the hepatocytolysis syndrome, there were performed the viral

markers for the viral infection with hepatotropic viruses infection, that came out negative [negative HBs (hepatitis B surface) antigen and anti-HCV (hepatitis C virus) antibody].

The abdominal ultrasound (US) highlighted a diffusely demarcated hypoechogenic mass, with a polycyclic contour, with sizes over 20 cm, which impedes the observation of other abdominal organs. Taking into consideration the US aspect, there was performed an abdominal computed tomography (CT) examination.

The abdominal-pelvic and extended inferior thoracic CT performed also after contrast substance administration highlighted the following: pleuro-pulmonary aspects, without any suspect images of pulmonary proliferative, mediastinal or thoracic processes, without any pleural liquid collections. The liver appeared without any changes in size, homogenous even after i.v. administration of the contrast substance. The gallbladder presented normal sizes and a homogenous content. The pancreas presented a preserved acination, without any ductal dilations. The spleen, kidneys, adrenals and urinary bladder did not present any pathological alterations detectable by CT examination. Also, there were not highlighted any internal retroperitoneal or iliac adenopathies. However, the prostate was increased, with sizes of 5.3/4.1 cm, with a few eccentric calcifications.

Intra-abdominally, there was highlighted a fatty, polycyclic, polyseptic tumor, with diffuse calcifications in its structure, occupying the supra- and infra-mesocolic parts. The tumor occupied the central part of the abdominal cavity, printing and pushing the intestinal and colic ansa towards the periphery (Figure 2) and compressing the inferior cava vein correspondent to the infra-duodeno-pancreatic part of the medial region of the retroperitoneum, occupying the mesenteric-colic, paracolic areas and the supramesencolic part, in the neighboring region of the visceral part of the liver, stomach body and inferior pole of the spleen.

The tumor was present in the distal third, in the abdominal-pelvic region, an 8 cm growth, with a more fibrous expressed component. After administering the contrast substance (Optiray™ 350, 741 mg/mL, 1.5 mL/kg body weight), there was observed a poor iodophilia of the tumor septa and various small vascular pediculi originating in the central region of the retroperitoneum

and of the mesentery insertion on the posterior parietal wall (Figure 3).

The main lipomatous component, the septal fibrous component, the highlighted intra tumoral calcifications and the poor iodophilia after administering the contrast substance suggested the imagistic diagnosis of lipofibroma.

In this case, with the patient's informed consent, there was decided to perform a therapeutic surgery. During surgery, there was observed the presence of a giant tumor, 25/23 cm in diameter, partially encapsulated, of elastic consistency, with endured areas, extending from the epigastrium until the small basin, adherent to the meso-sigmoid. There was performed the tumor excision with a little difficulty, keeping in mind the performance of a good homeostasis. The post-surgery evolution was a favorable one, at discharge the patient being surgically cured after 14 days since surgery.

The anatomopathological examination macroscopically showed a 250/220/230 mm tumor, relatively well-encapsulated, with a macroscopic aspect of a section fatty tissue, with harder whitish areas and 12.3 kg in weight (Figure 4).

For the histopathological examination, tumor fragments were harvested and subsequently fixed in 10% formalin and included in paraffin, using the classical histopathological protocol. There were performed 4- μ m thick sections in the microtome that were stained with Hematoxylin-Eosin (HE) and green light trichrome, Goldner-Szekely (GS) technique.

The microscopic examination highlighted the presence of a fibro-lipomatous tissue, without any cellular atypias, formed of large-sized adipocytes (over 250 μ m) (hypertrophic adipocytes), grouped in adipose lobules of various sizes, separated by a rich fibrous tissue of collagen fibers with a disordered arrangement (Figures 5 and 6). In some areas, the adipocytes seemed to fusion, generating pseudocystic lipomatous cavities of large sizes (Figure 7).

In the fibrous septa structure, we frequently identified arterioles with a thickened wall, due to collagen deposits or sclero-hyaline material in the medial tunica (Figure 8) and a diffuse inflammatory infiltrate, formed of lymphocytes and plasmocytes (Figures 9 and 10).

All these clinical and paraclinical data allowed us to establish the diagnosis of giant abdominal lipofibroma.

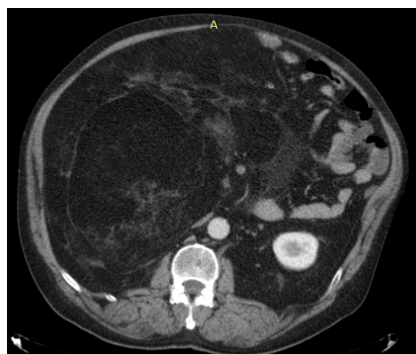


Figure 2 – CT image of the abdomen, where we can observe the presence of an abdominal tumor with a heterogeneous hyposignal, compressing and moving the intestinal ansa.

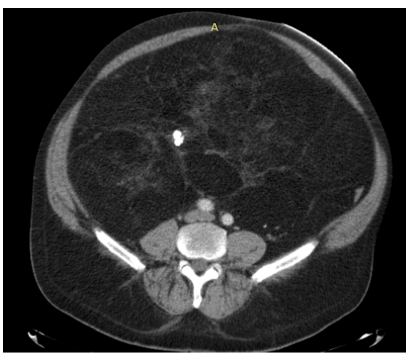


Figure 3 – Abdominal CT in the infra-mesocolic part, where we can observe a low capture of the contrast substance.



Figure 4 – Macroscopic aspect of the tumor after excision.

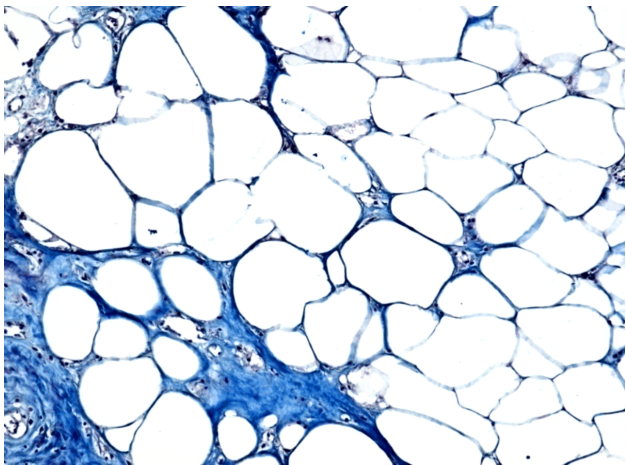


Figure 5 – Overall image of the fibroadipose tissue, with large-sized adipocytes, separated by fine conjunctivas. GS trichrome staining, $\times 100$.

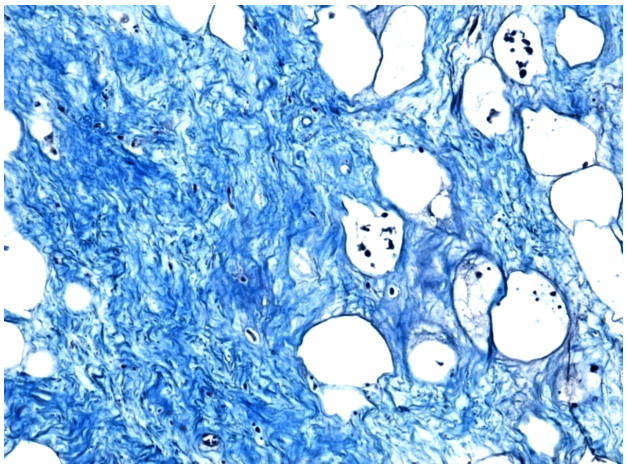


Figure 6 – Gross conjunctive septa, made up of collagen fibers with a heterogeneous arrangement. GS trichrome staining, $\times 100$.

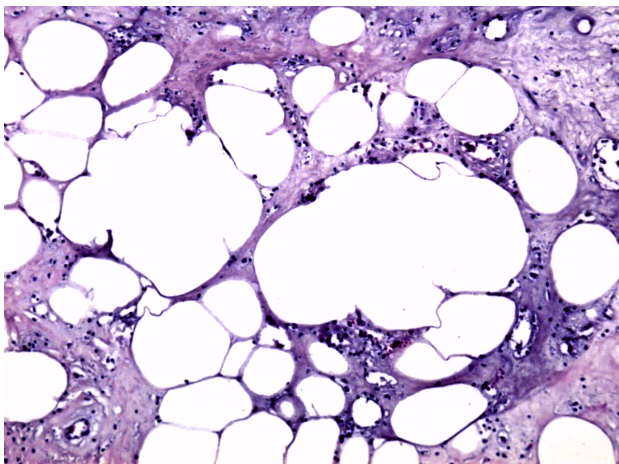


Figure 7 – Pseudocystic lipomatous cavities. HE staining, $\times 100$.

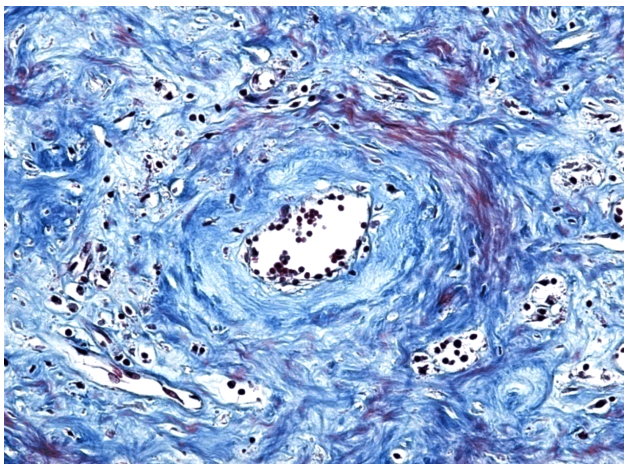


Figure 8 – Arteriole with important phenomena of arteriosclerosis present in the thickness of a conjunctive septa. GS trichrome staining, $\times 200$.

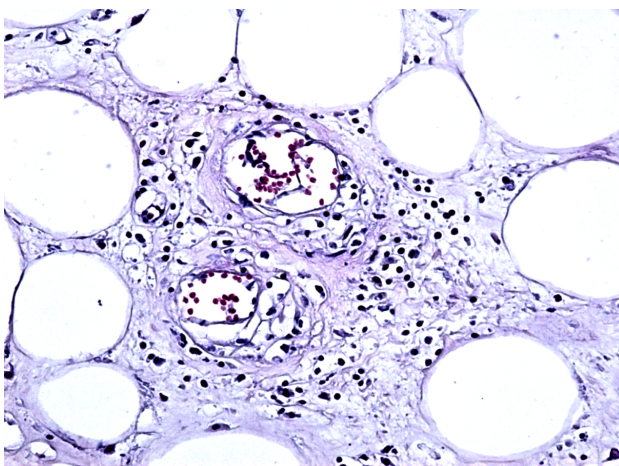


Figure 9 – Conjunctive septa containing a perivascular inflammatory infiltrate. HE staining, $\times 200$.

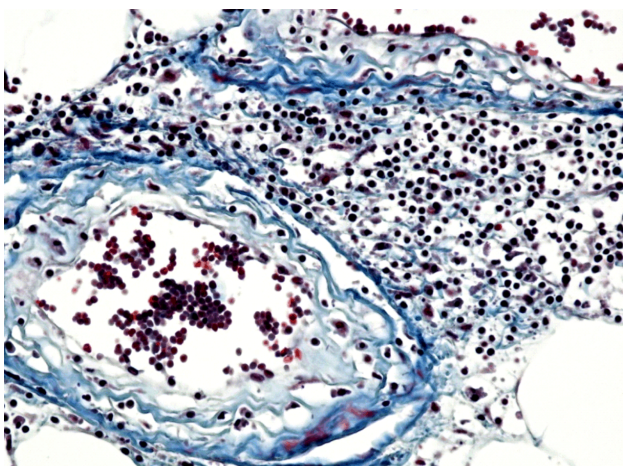


Figure 10 – Image of chronic abundant perivascular inflammatory infiltrate. GS trichrome staining, $\times 200$.

Discussion

Lipomas are one of the most frequent benign mesenchymal tumors made up of mature fatty tissue, emerging in all regions with fatty tissue [11, 12]. They appear as tumors of various sizes, in any part of the body [12]. They may appear in all ages, from babies [13] to very old people.

Lipomas developed in the abdominal cavity may be asymptomatic, commonly observed by current imagistic examinations: abdominal US, CT scan or magnetic resonance imaging (MRI), performed for other conditions. Most often, the abdominal cavity lipomas have non-specific symptoms: abdominal distension, diffuse pains, anorexia, weight loss, sensation of abdominal fullness,

diarrhea, constipation, etc. [10, 13]. When localized in the mesentery, small intestine or colon, they may cause intestinal occlusions [14, 15], intestinal transit disorders or even phenomena of acute abdomen. We believe that the clinical symptoms depend on the tumor size and localization. In our case, even though the tumor had quite large sizes, it did not determine any intestinal transit disorders, like constipation or diarrhea, nor phenomena of intestinal occlusion. Most studies showed that, when the tumor is close to the intestinal lumen and far from the mesenteric root, it may cause abdominal pain, by the compression of the intestinal ansa, even though the passage of the intestinal content is possible. In our case, the patient presented diffuse, non-specific abdominal pains.

Although they rarely develop in the abdominal cavity, lipomas may grow in any region where fatty tissue develops: in the stomach [16], duodenum [17, 18], ileum [19], colon [20–23], mesentery [12], retroperitoneal space [24–26], parietal peritoneum [27], etc.

The prevalence and incidence of lipomas is not quite well known, many of these tumors being asymptomatic, remaining unknown. A high incidence of lipomas was observed in obese patients, in patients with diabetes mellitus, high blood pressure, dyslipidemias, and chromosomal changes [28]. None of these predisposing factors was identified in our patient.

In our case, the tumor progressed without any symptoms for a long time, the patient being monitored for cardiovascular conditions (high blood pressure and fibrillation) for various years. The particularity of our case consisted in the very large sizes of the tumor (250/220/230 mm) and its insidious evolution. Also, the tumor origin could not be exactly established, as it had also developed vascular adhesions and pedicles, both in the mesentery and the colon. However, most part of the tumor and the largest vascular pedicles came from the retroperitoneal space.

The development of retroperitoneal tumors is possible in the form of isolated or confluent masses, in relation to its size, becoming palpable transabdominally and reaching very large sizes. The extension of retroperitoneal tumors to other regions is quite frequent and it includes the mesentery, the pelvic-subperitoneal region and the abdominal cavity.

In our case, as in most reported cases [20, 29], the biological examinations were not suggestive for the diagnosis. Still, the imagistic examinations (abdominal US, CT scan) played an essential part in establishing the positive and differential diagnosis, the tumor extension and its effect on the surrounding organs. If the abdominal US performed did not allow the evaluation of the tumor effects on the abdominal organs, due to its giant size, the CT scan provided enough data for diagnosis orientation and establishing the treatment conduct. Most studies support the idea that abdominal US may detect abdominal lipomas with a diameter larger than 3 cm as homogenous US masses, with an echostructure similar to the subcutaneous cellular tissue, but the image may lead to diagnosis confusions [10, 12]; the best diagnosis data are provided by the abdominal CT and MRI [30, 31].

The treatment of lipomas is a surgical one [24, 32], using a medial transabdominal approach in the case of a very large sized tumor, or a laparoscopic one, in the case

of smaller tumors. The surgery is sometimes easy to perform, the tumor being marked by a fibrous capsule, but it still includes many risks, the tumor excision being prone to harm the anatomical structures (ureter, mesentery, etc.). In our case, the tumor excision was difficult due to the tumor sizes, but there were not any complications during excision or after surgery.

The histopathological examination is mandatory for the differentiation of fatty tissue benign lesions from malignant ones, especially liposarcomas [33].

Conclusions

Abdominal lipomas, though rare, create problems of positive and differential diagnosis, even when the sizes are quite large. The imagistic investigations suggest the diagnosis, still only the histopathological examination can make the difference between a benign and a malignant lesion. The presented case represents the largest lipofibromas reported until now.

Conflict of interests

The authors declare that they have no conflict of interests.

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