



Large Rectus Sheath Lipoma: Minimally Invasive Approach for Removal

Mohammad AL Yaseen¹, Moamena El-Matbouly^{1,2*}, Ahmed Suliman¹,
Ahmed Z Albahrani¹

¹Department of Surgery, Division of General Surgery, Hamad Medical Corporation, Doha, Qatar

²Weill Cornell Medical College, Doha, Qatar

ABSTRACT

Introduction: lipoma is a rather common and benign mesenchymal tumour. Although it is a benign entity; it can resemble more dangerous tumours such as liposarcoma. Clinical imaging like US and CT scan can be used to make the diagnosis as simple lipoma is usually homogenous in intensity.

Case summary: we present a case of large rectus sheath lipoma in a 35-year-old female that was complaining of uneven contour of the abdominal wall. Her CT and MRI images showed; oval homogenous fat density structure with fine septae measuring about 4.7 x 10.5 x 20 cm in AP, TR and CC dimensions abutting the undersurface of the right rectus abdominis muscle representing rectus sheath lipoma. Due to the large size of the lipoma; the patient underwent surgical resection of the lipoma. Minimally invasive techniques were applied in removing the lipoma; as it was removed laparoscopically. Patient recovered well and was discharged on the same day.

Discussion and conclusion: A lipoma is generally a benign entity; but it can mimic a more dangerous tumour such as liposarcoma and atypical lipomas. Imaging like CT and/or MRI scans help in establishing the diagnosis. Surgical excision of large lipomas is recommended to rule out other pathologies like atypical lipomas and liposarcoma. Resection of large rectus sheath lipoma is safe and feasible with the application of minimally invasive approaches to save the patient a large and unnecessary large scare. Minimally invasive techniques can be safely applied for more aesthetic results.

Keywords: rectus sheath lipoma, surgical resection, minimally invasive, CT scan

Introduction

A lipoma is a benign mesenchymal tumor, that accounts for approximately one-half of all soft tissue tumors [1]. Although it is in itself a benign entity that does not require surgical resection, it closely resembles more sinister tumors such as atypical lipomas and liposarcoma. Lipomas can sometimes be “large,” defined as equal to or greater than 5 cm in diameter and can rarely be “giant” when sized at least 10 cm [2]. US, CT, and MRI are all useful for differentiation of the tissue composition. At US, pure fat is usually hypoechoic, with an appearance similar to that of subcutaneous fat. At CT, fat shows low attenuation, with a range of -10 to -100 HU, but it may be difficult to see in small masses. MRI best shows macroscopic fat as a loss of signal intensity in a mass on fat-saturated MR images. simple lipoma can be made with relative certainty on ultrasound scan (USS) where the lesion is of homogenous fat echogenicity and on computed tomography (CT) demonstrates fat attenuation. On magnetic resonance imaging (MRI), the lesion is of pure fat signal on all sequences and may contain a few thin fibrous septa, which are low signal on both T1 and T2 sequences. Atypical lipomas have thick septa,

*Correspondence:

Moamena El-Matbouly, Department of Surgery, Division of General Surgery, Hamad Medical Corporation, Doha, Weill Cornell Medical College, Doha, Qatar

Article Type: Case Study

Received: 02/06/2022

Published: 10/06/2022

Citation:

Mohammad AL Yaseen¹, Moamena El-Matbouly^{1,2*}, Ahmed Suliman¹, Ahmed Z Albahrani¹. Large Rectus Sheath Lipoma: Minimally Invasive Approach for Removal Op Acc Jour of Med & Clini Sur 4(2)-2022.

Copyright © All rights are reserved by Mohammad AL Yaseen¹, Moamena El-Matbouly^{1,2*}, Ahmed Suliman¹, Ahmed Z Albahrani¹

are often larger in size (> 10 cm), and have a decreased fat composition, with nodular intralesional nonfat content and septal enhancement [3]. thick, irregular septal structures showing marked enhancement are features more common to liposarcomas [4]. Liposarcomas are reported to comprise 7 %–27 % of soft tissue sarcomas, and they may occur wherever fat is present [2].

Case summary

We are presenting a case of a large rectus sheath lipoma in a young 35 years old female that presented complaining of uneven contour of her abdominal wall. She was first investigated with MRI scan that showed 18-cm fat-containing lesion deep to the right rectus abdominis muscle impressive of lipoma. Due to the size of the lesion CT scan was done that redemonstrated of the oval homogenous fat density structure with fine septae measuring about 4.7 x 10.5 x 20 cm in AP, TR and CC dimensions abutting the undersurface of the right rectus abdominis muscle representing rectus

sheath lipoma. Figure 1 summarized the images done for the patient including the CT and MRI scans. Due to the large size of the lipoma; the patient underwent surgical excision. Figure 2 shows the operating room setup and the position of the surgeon and the assistant. We applied minimally invasive surgery principles; we approached this right rectus sheath lipoma as IPOM hernia surgery. We placed three ports on the left side laterally. The right posterior rectus sheath was opened and the lipoma was easily enucleated as displayed in figure 3. Then the posterior rectus sheath was closed using barbed sutures and the specimen was removed from a small Pfannenstiel incision. The patient was pain free in the post operative period and was discharged home on the same day. One month post operatively; the patient presented to clinic very pleased with the aesthetic results of her abdomen. The final pathology was supporting benign adipose tissue in keeping with a final diagnosis of simple benign lipoma.

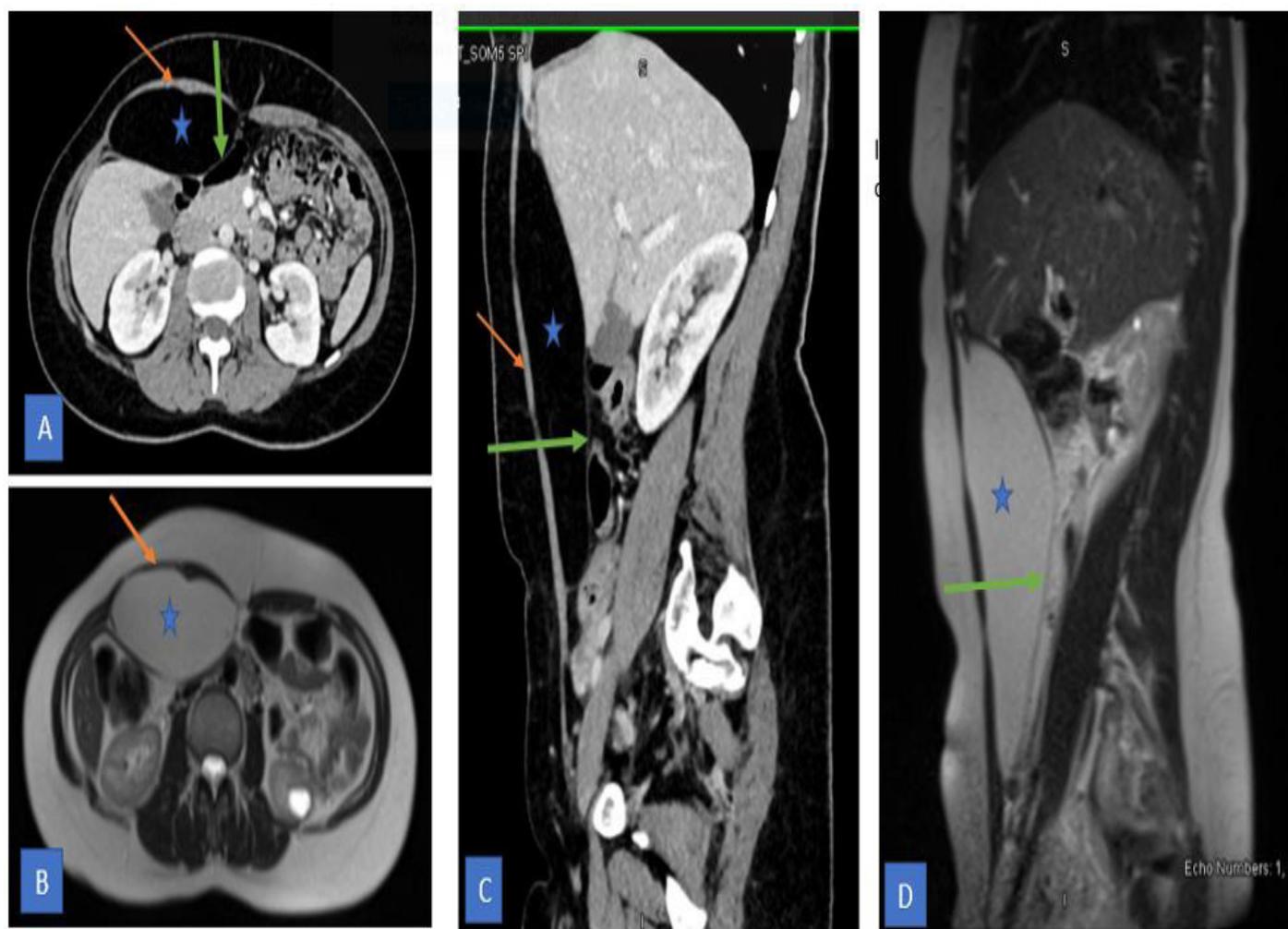
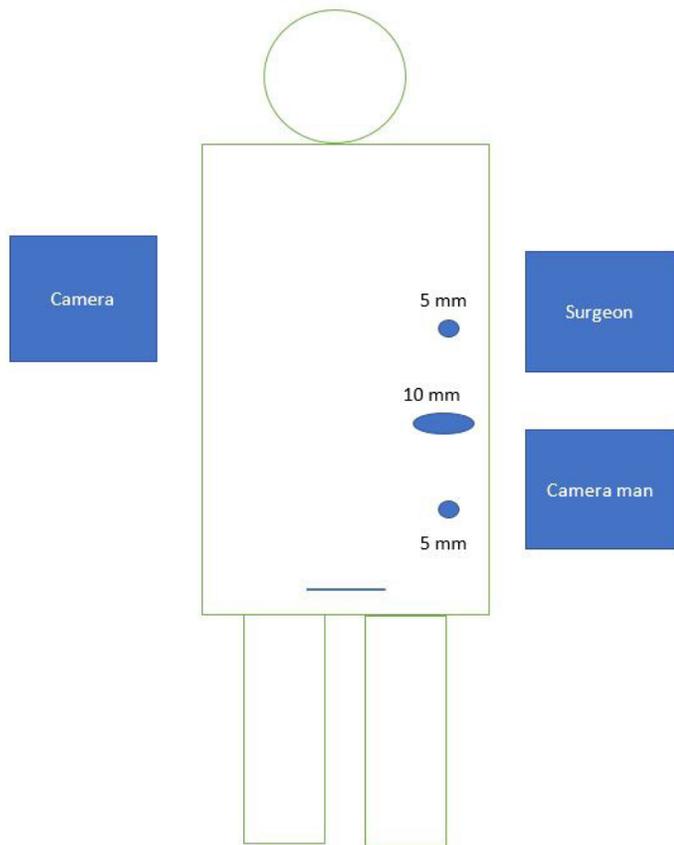


Figure 1: A: cross sectional CT scan: blue star: rectus sheath lipoma; orange arrow: the rectus muscle; Green Arrow: posterior rectus sheath. B: cross sectional MRI image. C: coronal CT scan cut. D: coronal MRI image.



Discussion

Giant lipomas (like our case) have relatively higher potential for malignant degeneration; therefore, surgical excision is the treatment of choice to apprehend malignancy and provide tissue diagnosis [5]. Our patient had fine septae within the lipoma that was homogenous in intensity and due to the large size of the lipoma; decision was taken for surgical excision. Figure 2 shows the OR set up and the access to remove the rectus sheath lipoma. We utilized principles of MIS and placed the ports like IPOM on the left side; posterior rectus sheath was opened and the lipoma was enucleated. The application of minimally invasive technique to resect such large lipoma saved our patient from having large laparotomy scar with all its expected complications.

Conclusion

Giant lipomas should raise suspicion of malignant degeneration. Radiological guidance should provide enough evidence to decide whether to do a biopsy or not; hence, saving the patient an extra invasive procedure. We recommend the use of MRI as it best shows macroscopic fat as a loss of signal intensity in a mass on fat-saturated MR images and is more accurate than other modalities when a lipoma is on top of the differential diagnosis. Resection of large rectus sheath lipoma is safe and feasible with the application of minimally invasive approaches to save the patient a large and unnecessary large scar.

Figure 2: OR set up, with ports placed on the left side to access the lipoma (right rectus sheath lipoma), Pfannestiel incision for retrieval of the lipoma.

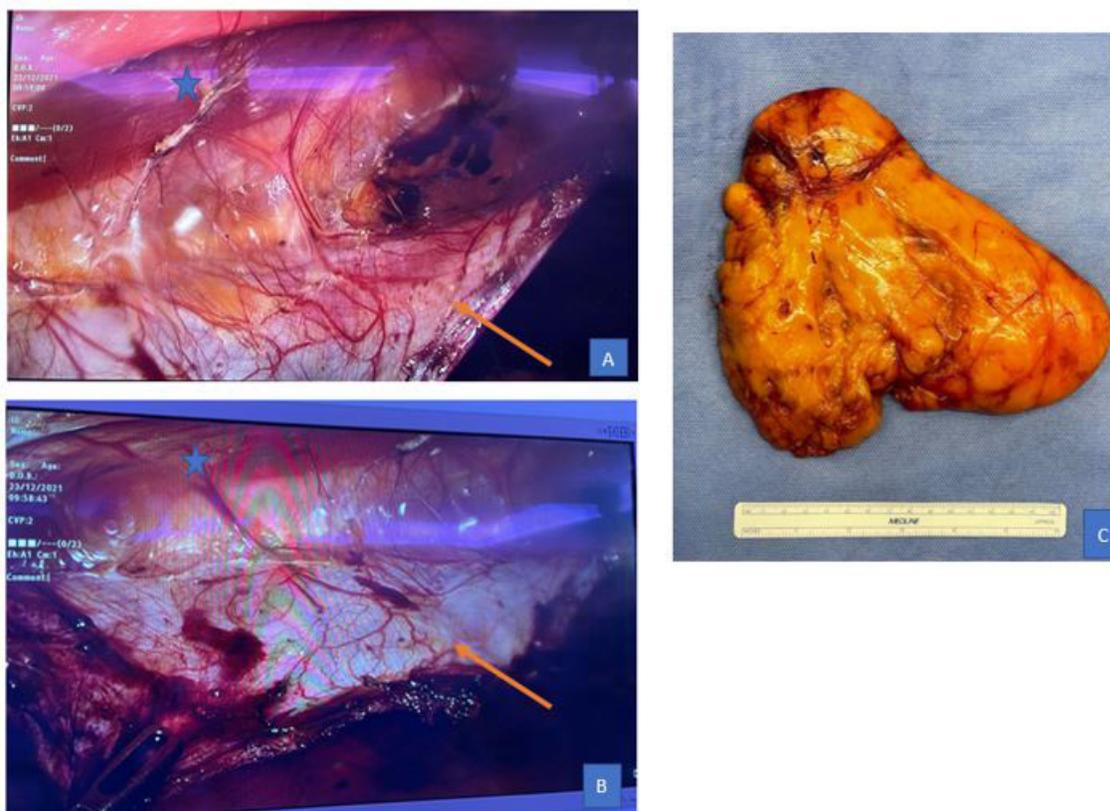


Figure 3: A&B: intra-operative images showing the plane post removal of the lipoma. Blue star: the right rectus muscle; orange arrow: the posterior rectus sheath after it was opened to remove the lipoma. C: post-operative specimen showing the lipoma

Declaration of Competing Interest

The authors report no declarations of interest.

Reference

1. Weiss SW (1996) Lipomatous tumors. In: Weiss SW, Brooks JSJ, eds. *Soft Tissue Tumors*. Baltimore, MD: Williams & Wilkins; pp. 207–251.
2. Sanchez MR, Golomb FM, Moy JA, Potozkin JR (1993) "Giant lipoma: case report and review of the literature," *Journal of the American Academy of Dermatology* 28: 266–268.
3. Kransdorf MJ, Bancroft LW, Peterson JJ, Murphey MD, Foster WC, et al. (2002) Imaging of fatty tumors: distinction of lipoma and well-differentiated liposarcoma. *Radiology* 224(1): 99–104.
4. Bashir U, Moskovic E, Strauss D, Hayes A, Thway K, et al. (2014) Soft-tissue masses in the abdominal wall. *Clin Radiol* 69(10):e422-31.
5. Sanchez MR, Golomb FM, Moy JA, Potozkin JR (1993) "Giant lipoma: case report and review of the literature," *Journal of the American Academy of Dermatology* 28: 266–268.
6. Morales Morales CA, González Urquijo M, Morales Flores LF, Sánchez Gallegos MN, Rodarte Shade M (2021) Giant intramuscular thigh lipoma: A case report and review of literature. *Int J Surg Case Rep*.