A case of laparoscopic resection of myxoid liposarcoma of the greater omentum

Sze Li Siow, FRCS[1,2], Mohamad Hisham Faqihuddin, MBBS[1], Hans Alexander Mahendran, MS[3]

[1]Department of General Surgery, Sarawak General Hospital, Ministry of Health Malaysia, Kuching, Malaysia, [2]Department of Surgery, Faculty of Medicine and Health Sciences, Universiti Malaysia Sarawak, Kuching, Malaysia, [3]Department of General Surgery, Hospital Sultanah Aminah, Johor Bahru, Johor, Malaysia

SUMMARY

Primary omental liposarcoma is a rare clinical entity with less than 20 cases being reported in the literature. Laparotomy has been the traditional approach for resection, with no reports of laparoscopic resection. A 39-year-old lady presented at the Sarawak General Hospital, Kuching, Malaysia with a history of a progressive, painless left upper quadrant abdominal swelling for a year. CT scan showed a well-defined heterogeneously enhancing cystic mass measuring 7.5x7.5x8.1cm with a poor plane with the adjacent greater curvature of stomach and transverse colon. Upper and lower endoscopy was normal. The tumour was completely dissected from the adjacent transverse colon and removed laparoscopically. Histopathological examination of the resected specimen revealed a myxoid liposarcoma. She had an uneventful recovery and was discharged well on the third post-operative day. She subsequently underwent adjuvant chemotherapy and was well at 1-year follow-up with PET CT showing no evidence of recurrence or metastases.

KEY WORDS:

Laparoscopic surgery; myxoid liposarcoma; omental liposarcoma

INTRODUCTION

Liposarcomas (LS) is the most common soft tissue sarcoma, accounting for approximately 20% of all sarcomas in adults.[1] It arises from adipose tissue and can occur anywhere in the body. The lower extremities and retroperitoneal areas are the most common sites. Intra-peritoneal liposarcomas are, however uncommon.[2] There have been reports of involvement of the greater omentum, small bowel mesentery, colon and mesorectum.[2] Clinical symptoms of LS are highly variable and non-specific. Surgical resection with good oncological margins is the cornerstone of successful resection and treatment as well as establishing proper histological diagnosis.[2,3] Traditionally, resection has been achieved via laparotomy and a transabdominal approach.[2] Successful laparoscopic approach has yet to be reported. Herein, we report a successful laparoscopic resection of a primary omental liposarcoma and discuss the surgical techniques involved.

CASE PRESENTATION

A 39-year-old lady presented at the Sarawak General Hospital, Kuching, Malaysia for further evaluation of a left upper quadrant abdominal swelling that was noticed for 12 months. She did not experience any abdominal pain or altered bowel habit. She had no prior medical or surgical history other than history of two prior lower segment caesarean section and open appendicectomy that were all uneventful. On clinical examination, a solid mass was palpable at the left upper abdomen. An abdominal ultrasound showed the presence of a heterogeneously hypoechoic mass with areas of necrosis in the left abdomen. Computed tomography (CT) scan showed a well-defined heterogeneously enhancing cystic mass measuring 7.5x7.5x8.1cm (Figure 1). It had a poor plane with the adjacent greater curvature of the stomach and transverse colon. There was no focal liver lesion but there was minimal ascites in the pelvis. Upper endoscopy and colonoscopy did not reveal any mass lesions. The initial diagnosis of the mass was not clear and diagnostic laparoscopy was planned to assess resectability.

Surgery was performed with the patient under general anaesthesia and positioned in a modified lithotomy position. Initial diagnostic laparoscopy was performed to exclude peritoneal and liver metastasis. The tumour was localised below the greater curvature of the stomach enveloped by the greater omentum. Dissection was performed with detachment of the greater omentum from the anterior surface of the mass using an ultrasonic scalpel (Harmonic, Ethicon, Cincinnati, OH, USA).

The mass was found to be abutting the transverse colon posteriorly (Figure 2). The tumour was carefully dissected from the transverse colon using a combination of blunt dissection and use of the energy device. We completed the laparoscopic excision as a fine avascular plane was established between the mass and the transverse colon. There was a suspicious lesion at the surface of the liver at segment 8 which was biopsied. The ascitic fluid in the left paracolic gutter was aspirated and sent for cytology. At the end of the surgery, the specimen was then removed through a previous Pfannenstiel incisional scar using a specimen retrieval bag. The operative time was approximately 120 minutes and intraoperative blood loss was approximately 50mL.

Corresponding Author: Sze Li Siow
Email: szeli18@yahoo.com

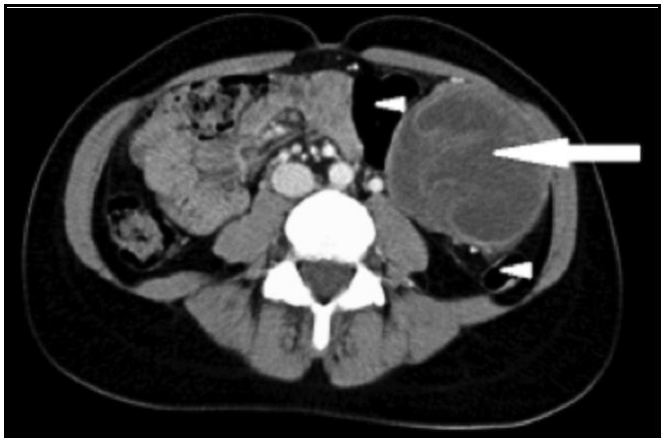

Fig. 1: Abdominal CT showed a well-defined 7.5x7.5x8.1cm heterogeneously enhancing cystic mass (arrow) adjacent to the transverse colon (arrowhead).

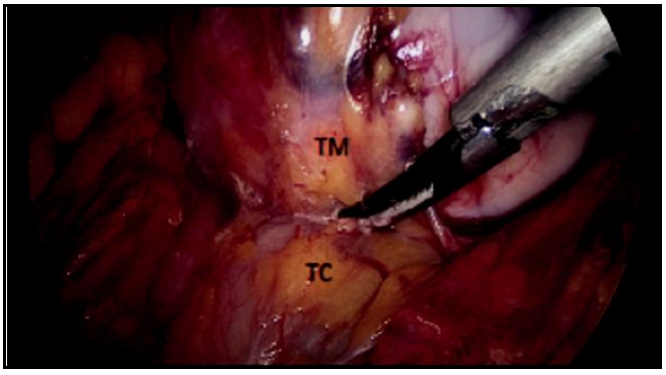

Fig. 2: Intraoperative findings. The tumour was abutting the transverse colon. TM, tumour, TC, transverse colon.

Macroscopic examination of the specimen revealed an encapsulated solid cystic mass weighing 260gram and measuring 83x75x60mm with dilated blood vessels on its surface. Microscopic examination demonstrated a background of myxoid stroma with scattered small signet ring lipoblast. There were areas showing delicate capillary vasculature and scattered large-sized blood vessels. No tumour necrosis seen. Immunohistochemically, the tumour cells were positive for S-100 protein and negative for SMA, Desmin and CD34. These findings were consistent with the diagnosis of myxoid liposarcoma. Both the liver biopsy and ascitic cytology were negative for malignancy.

Patient made an uneventful recovery and was discharged well on post-operative day-3. Subsequently, she underwent adjuvant chemotherapy and was well. At 1-year follow-up, Positron Emission Tomography CT was performed and showed no evidence of distant metastasis or recurrence.

DISCUSSION

Liposarcomas are slow growing tumours which are often discovered incidentally or became noticeable only when they become large and manifest discomfort. Histologically, they can be divided be into four distinct variants according to World Health Organization (WHO) classification of soft tissue tumours: well-differentiated, myxoid, pleomorphic and de-differentiated.[3] The histological subtype has been shown to correlate with clinical behaviour. Well-differentiated subtype has the lowest risk of metastases while pleomorphic the highest. The myxoid types are intermediate with the risk increases with the amount of round cell component. Myxoid liposarcoma (ML) is the second most common variant, accounting for 20-50% of liposarcomas.[4] Histologically, it is further divided into pure myxoid type and round cell myxoid type.[4,5] Morphologically, they belong to a continuous histopathologic spectrum as they share the same specific chromosomal translocation, t(12;16)(q13;p11).[4,5] Yet, they have a different prognosis based on the round cell percentage.[4,5] Age at diagnosis, tumour size, tumour grade, presence of metastatic disease and surgical margins all influence the overall prognosis.[1,3] In our case, young adult, tumour size less than 10 cm, myxoid subtype, absence of metastatic disease at presentation, absence of necrosis within the mass and complete resection of the tumour are the favourable prognostic factors for recurrence and overall survival. Nevertheless, long-term follow-up is mandatory as it is estimated that 10% of the patients with myxoid subtype will develop metastatic disease with a 5-year survival of 90%.[1]

ML has a predilection for the lower extremity.[1,3] However, they can manifest in any extremity, the neck, intrathoracic locations, retroperitoneum and intra-abdominal locations.[2,3] Intra-peritoneal liposarcoma such as primary omental liposarcoma as in our case are rare with only 19 cases reported in since 1936 and patients were reported to be between 11 and 83 years of age with an average age of 51.1 years.[2] Clinical presentation varies from asymptomatic to various non-specific symptoms such as abdominal pain, swelling, fever, constipation and abdominal distension.[2] Histological subtypes included well differentiated, myxoid, pleomorphic and dedifferentiated types.[2]

Preoperative diagnosis of LS is often difficult because of the nonspecific nature of the symptoms and inconclusive findings of imaging modalities. CT or magnetic resonance imaging (MRI) performed with contrast is recommended for primary tumour staging.[3] As for ML, MRI can be utilised to discriminate low-grade from high-grade type.[4] CT thorax should be included to exclude metastatic disease.[3] A total spine MRI should also be considered given the propensity of this subtype for spine metastases.[3] As for the subsequent follow-up in this case, PET CT was chosen for the following reasons: (1) Re-staging, especially after surgery and adjuvant systemic chemotherapy. (2) It allows assessment of metastatic disease which impact on subsequent treatment decision making.

Laparoscopic approach was performed in this case as the initial diagnosis for the mass was unclear. The approach facilitated staging as well as assessment for resectability. The magnified view

afforded by the laparoscopic approach also allowed assessment of the plane of resection of the primary tumour especially when the preoperative CT scan could not accurately determine whether either or both the stomach and the transverse colon were involved. Even though we had predicted that both organs were not the origin of the tumour having performed both upper and lower endoscopy before the surgery, the initial examination revealed that transverse colon may be involved. It was only after additional dissection and mobilisation of the tumour from the greater omentum, we were able to identify the fine avascular tissue planes between the tumour and the transverse colon. An en bloc resection of the transverse colon can be performed when a sufficient resection margin cannot be secured.

CONCLUSION

Primary omental liposarcoma is rare. The laparoscopic approach is useful for staging and allows safe resection for diagnosis of such tumours.

ACKNOWLEDGEMENTS

We thank the Director General of Health, Malaysia, for permission to publish this paper. The authors have no conflicts of interest to disclose and received no financial support for this report. No ethical approval was required for this case. Written informed consent was obtained from the patient for the publication of this report and any accompanying images.

REFERENCES

1) Dalal KM, Kattan MW, Antonescu CR, Brennan MF, Singer S. Subtype specific prognostic nomogram for patients with primary liposarcoma of the retroperitoneum, extremity, or trunk. Ann Surg 2006; 244(3): 381-91 .
2) Hashimoto S, Arai J, Nishimuta M, Matsumoto H, Fukuoka H, Muraoka M, et al. Resection of liposarcoma of the greater omentum: A case report and literature review. Int J Surg Case Rep 2019; 61: 20-5.
3) Abaricia S, Hirbe AC. Diagnosis and treatment of myxoid liposarcomas: histology matters. Curr Treat Options Oncol 2018; 19(12): 64.
4) Löwenthal D, Zeile M, Niederhagen M, Fehlberg S, Schnapauff D, Pink D, et al. Differentiation of myxoid liposarcoma by magnetic resonance imaging: a histopathologic correlation. Acta Radiol 2014; 55(8): 952-60 .
5) Crago AM, Dickson MA. Liposarcoma: multimodality management and future targeted therapies. Surg Oncol Clin N Am 2016; 25: 761-73.