Primary Leiomyosarcoma Of The Greater Omentum: A Case Report

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Introduction:

Tumours of the greater omentum are rare—malignant tumours even rarer. Leiomyosarcomas are uncommon malignant tumours originating in smooth muscle, usually in the gastrointestinal tract, the retroperitoneum and the genitourinary tract[1-2]. Primary leiomyosarcomas of the greater omentum are extremely rare, with only 24 cases, reported since 1934[3]. Here we report the case of a patient with a primary greater omentum leiomyosarcoma, the possible aetiology and its clinical management.

Clinical History:

- 49-year-old woman who underwent an abdominal myomectomy and excision of benign parasitic fibroid arising from the omentum 1 year ago presented with a few weeks' history of abdominal bloating and right-sided abdominal pain.
- A computed tomography (CT) scan of the abdomen and pelvis showed a large lobulated soft tissue mass measuring 13.5cm in the widest dimension suspected to be within the mesentery of the right abdomen (Fig 1). There were distended vessels around the lesion with possible varices and recanalisation of umbilical vein, in keeping with neoplasm, possibly primary which favour lymphoproliferative malignancy such as lymphoma.
- Histopathology from CT-guided fine needle biopsy of the mass revealed a spindle cell tumour with cellular atypia but not enough histological criteria for leiomyosarcoma (Fig 2).
- The following month, the patient underwent a total abdominal hysterectomy, bilateral salpingo-oophorectomy and excision of an omental mass. There was a large, solid, lobulated tan mass of tumour measuring 17 x 12 x 11 cm and weighing 1.2kg (Fig 3).
- Sections of mass showed a hypercellular smooth muscle tumour with necrosis and haemorrhagic zones and a mitotic index of up to 22 mitosis in each ten high-power fields. Immunohistochemistry analysis was positive for desmin and SMA confirming smooth muscle origin and high proliferative index with ki-67. There was strong nuclear staining with both estrogen and progesterone receptors (70% and 80%, respectively) (Fig 4).
- The tumour was negative for HMB45, melanA, DOG-1, CD117 and p53. The diagnosis of leiomyosarcoma was made.
- Subsequent fluorodeoxyglucose (FDG)-positron emission tomography (PET) scan showed no primary site elsewhere or metastatic disease.
- Consensus at Gynaecologic Oncology Multidisciplinary (MDT) meeting was to reserve systemic therapy for disease recurrence at which stage, chemotherapy, radiotherapy and clinical trials could be considered.

Macroscopic Findings:

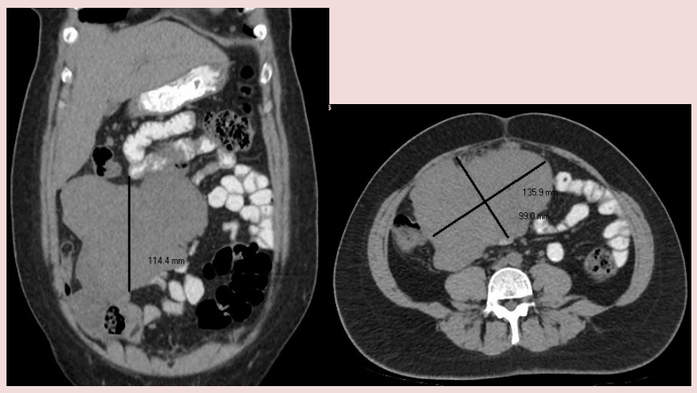

Fig 1 CT scan of the abdomen and pelvic showing a large lobulated soft tissue mass

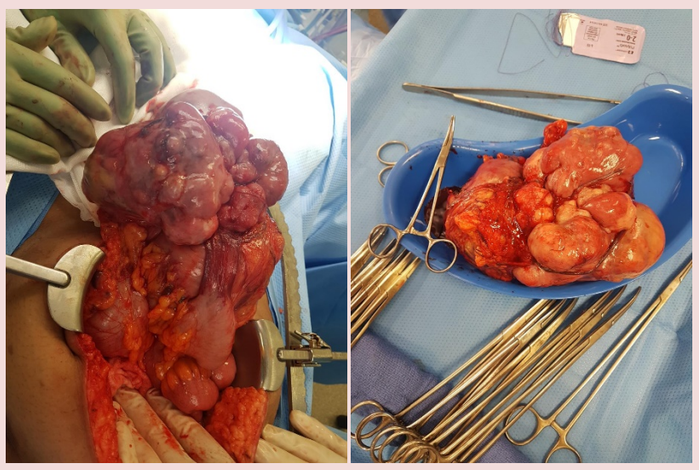

Fig 3 The gross appearance of the solid, tan, lobulated mass, measuring 17cm across and weighing 1.2kg.

Microscopic Findings:

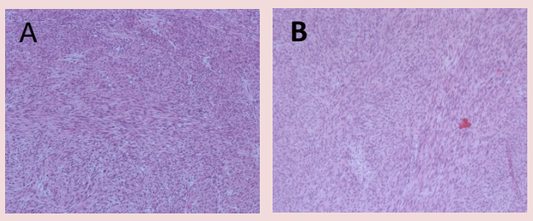

Fig 2 Core biopsy of the mass showing hypercellularity (2A) and mild atypia (2B) (H&E stains, x 100).

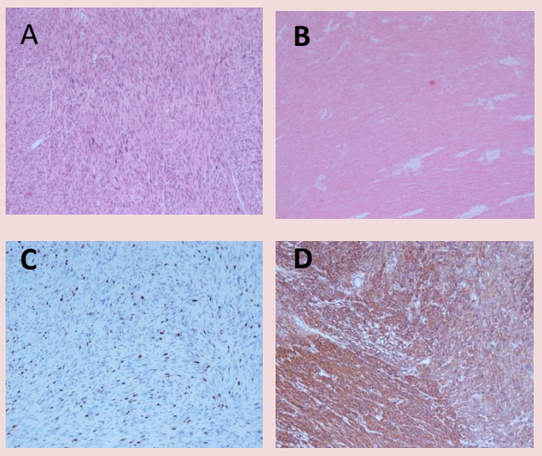

Fig 4 Primary leiomyosarcoma of the greater omentum showing prominent atypia (4A), typical, small coagulative tumour necrosis (4B), high proliferation index Ki 67 (4C) and positive staining for smooth muscle actin, SMA (4D). H&E stains for 4A and 4B. IHC stains 4C and 4D , x 100.

Discussion:

A review of 23 previously reported cases of primary leiomyosarcoma of the greater omentum reveals that *De novo* origin is the most likely aetiology. This is the first report to our knowledge, of a leiomyosarcoma of the greater omentum presenting 1-year post removal of parasitic leiomyoma from the greater omentum. From this history, a few possible aetiology can be suspected:

- The history of previous parasitic leiomyoma suggests the possibility of malignant transformation from a benign fibroid.
- The other possibility is a misdiagnosis of the initial parasitic leiomyoma. This was reported as benign leiomyoma, but histopathological diagnosis of parasitic leiomyoma can be a challenge and therefore this possibility cannot be completely excluded.
- Regardless of its aetiology, the history of only 1 year interval demonstrates the rapid growth suggestive of a malignant process.

The method of choice for imaging these tumours is CT scan with or without angiography. The aggressive behaviour of these tumours makes relapse a common problem, and long-term survival is anecdotal[4-5] unless complete excision of the tumour is achieved with early detection.

This case highlights its possible aetiology other than *De novo*, the aggressive nature of such a malignancy and the importance of complete excision of the tumour to optimise prognosis.

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