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TITLE: Retroperitoneal leiomyomatosis: grave “benign” consequence of power morcellation?

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A 46-year old nulliparous woman presented with increasing abdominal pain, pressure symptoms and urinary frequency. Clinical examination revealed an enlarged uterus (20 week’s gestational size) displaced anterosuperiorly by a significant pelvic mass.

Past medical history was unremarkable except for a laparoscopic myomectomy performed four years earlier (2016) for multiple uterine myomas (fibroids). The largest myoma was only partially excised owing to size and complexity and was shredded using power morcellation (without a containment bag) into smaller pieces for retrieval through the laparoscopic port.

Magnetic resonance imaging (MRI) on admission demonstrated new uterine and exuberant extra-uterine myomas occupying the pelvis (Figure 1, Panels A-B, white arrows).

Remarkably, some were retroperitoneal engulfing major vessels and bowel. These were not present at the original surgery. Multidisciplinary team discussion recommended surgical excision to exclude possible malignancy.

En-bloc resection of the recto-sigmoid and pelvic side wall myomas, total hysterectomy, bilateral salpingo-oophorectomy (Figure 1, Panel C), omental biopsy and end-colostomy

(Hartmann's) were performed. Histopathological revealed benign myomas, without evidence of malignancy, and confirmed their uterine origin. Follow-up MRI at 3 months showed no signs of residual intrapelvic disease; the patient remains asymptomatic and reports an improved quality of life.

Retroperitoneal leiomyomatosis is rare and its pathogenesis is poorly understood. We note that the largest fibroid was not completely removed during the first procedure and might have been the source of the retroperitoneal recurrence (independent of surgical technique). The exuberant extra-uterine (intra and retroperitoneal) spread of leiomyomas was likely an unintended consequence of power morcellation without a containment bag with seeding of cells sprayed during shredding. Power morcellation, which is a useful tool for minimally invasive surgery, has come under intense scrutiny due to the risk of disseminating an occult malignancy. Whilst this has rightly been a focus of informed consent and guideline development, "benign" consequences have been less talked about. As graphically illustrated here, although rare, these can lead to serious morbidity and should be discussed in shared decision-making and informed consent. Furthermore, this case stresses the importance of using meticulous surgical technique and containment morcellation bags to preserve oncological hygiene; frequently overlooked in benign cases.

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Figure: Large and intra and extra-uterine myomas.

A) Coronal T2-weighted MRI image showing multiple upper pelvic extra-uterine fibroids. B) Sagittal T2-weighted MRI images showing the uterus with a small fibroid, a large superior solid fibroid and a cystic intrapelvic fibroid. C) Surgical specimen from en-bloc resection of the recto-sigmoid, uterus, tubes, ovaries and lateral pelvic wall myoma. The black dash line demarcates the uterine body, tubes, ovaries and recto-sigmoid engulfed by the myoma; the grey dashed line demarcates retroperitoneal satellite myomas. White arrows point to myomas; filled arrows indicate the same myoma.

73 **Question:** A 46 year-old woman presented with a rapidly growing abdomino-pelvic mass
74 associated with abdominal discomfort, pressure symptoms and bowel and bladder changes
75 including incomplete emptying. What is the most likely diagnosis?

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77 A) Pelvic gastrointestinal stromal tumor (GIST)

78 B) Presacral teratoma

79 C) Retroperitoneal leiomyomatosis

80 D) Klippel-Trenaunay-Weber Syndrome