

Acute torsion of pedunculated subserosal uterine leiomyoma: a case report

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Abstract

Uterine leiomyomata are the most common neoplasms of the uterus. Although the majority of them are benign and asymptomatic, they can be associated with serious and life-threatening complications such as torsion, infarction and necrosis. The purpose of this report is to highlight a case of torsion of large pedunculated subserosal uterine myoma in a young woman and to emphasize the role of the imaging modalities (ultrasonography and computed tomography), in the investigation of female patients with acute abdominal and pelvic pain in the emergency department.

Keywords: uterine leiomyoma, torsion, ultrasonography, computed tomography

Introduction

Uterine leiomyomata, commonly known as fibroids, are the most frequent solid tumors of the female genital tract, affecting 20-40% of the females in the fertile age group. They are benign and composed of smooth muscle with varying amounts of fibrous connective tissue. Myomata symptoms and complications depend on their position in the uterus, their dimensions and the type of degeneration that they can undergo. Myomata are described based upon their position within the uterus as intramural, which is the most common type, submucosal and subserosal. The latter are located underneath the peritoneal surface of the uterus and may be pedunculated with exophytic extension into the pelvic and abdominal cavity⁽¹⁻³⁾. Subserosal myomata are frequently asymptomatic and may reach massive size without producing appreciable symptoms⁽⁴⁾. However according to their size, they can produce pelvic pressure and pain, symptoms from the urinary tract and constipation.

The pedunculated subserosal myomata are at risk of torsion around their stalks, infarction and necrosis, conditions that are rarely described in the literature, but widely recognized as a true medical emergency, requiring acute surgical intervention^(2,5). Symptoms presentation may be non specific and depend on the evolutionary phase of the torsion, which is related to the degree of twisting of the myoma's stalk and the duration of the torsion. In case of intermittent torsion symptoms may subside, become constant, or resolve. The complete torsion implies complete obstruction of first venous and later arterial flow with consequent necrosis, gangrene and peritonitis^(5,6).

Case Report

A previously healthy 30-year-old, Caucasian nulliparous woman, admitted to the emergency department (ED) with a sudden, severe diffuse abdominal and

pelvic pain. The patient reported nausea, vomiting and urinary symptoms.

The physical examination showed signs of peritoneal irritation and the laboratory parameters were within the normal limits. The β -Human Chorionic Gonadotropin test was negative. Transabdominal ultrasonography showed a large, abdominal-pelvic, well defined, hypoechoic mass, arising from the lesser pelvis and extending to the epigastrium in a midline position (Figure 1).

The Color and Power Doppler ultrasonography imaging did not detect any vascular flow of the mass. A moderate quantity of free intraperitoneal anechoic fluid was found in the pouch of Douglas. Contrast-enhanced Computed Tomography (CECT) of the abdomen and pelvis revealed a solid, huge (19 X14 X 11 cm), well circumscribed mass with lobulated margins originated from the fundus of the uterus and extended into the abdominal cavity (Figure 2).

The mass presented an inhomogeneous CT pattern and there was no enhancement after the intravenous contrast media injection.

A necrotic subserosal pedunculated myoma, connected by a thin pedicle to the uterus with torsion, was completely removed at surgery.

The patient's postoperative course was uneventful and she was discharged on the fourth postoperative day.

Discussion

Ultrasonography (US) is usually the first imaging modality used in the ED, for the initial evaluation of the female patients presenting with acute abdominal and pelvic pain and it is widely recognized as the initial tool of investigation of the acute complications of the uterine leiomyomata⁽³⁾.

The combination of transvaginal (TV) and transabdominal ultrasonography (TA) is the most widely used

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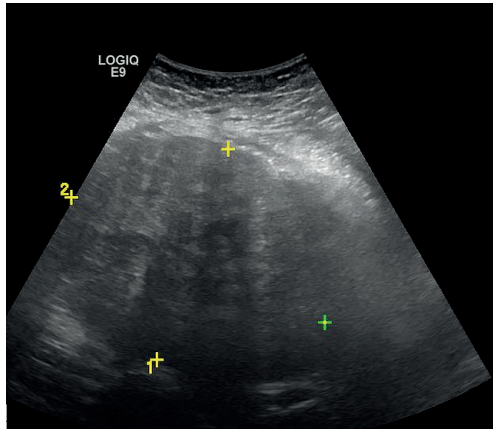


Figure 1. Axial transabdominal US shows a large, hypoechoic, pelvic mass, not surrounded by myometrium

technique for the evaluation of myoma's size, number, location and possible presence of degeneration. TV enables the visualization of small fibroids, while TA is more sensitive when large myomata are present such as subserosal pedunculated masses which extent into the abdominal cavity⁽²⁾. Fibroids with torsion and necrosis present with an absence of flow on Doppler U/S exam⁽³⁾.

US is the modality of choice for the accurate assessment of small quantity of intraperitoneal fluid, a finding that is extremely important and useful for the initial evaluation of the acutely-ill female patients presented in the ED with suspected gynaecological emergencies⁽⁷⁾.

Computed Tomography (CT) is not preferred for the characterization of pelvic masses in the routine clinical practice, and the uterine myomata are often seen incidentally on CT scans⁽⁸⁾. However CT is usually performed as the second imaging technique after U/S, when investigating female patients with abdominal and pelvic pain in the ED although in many centers, currently, CT is commonly used as the first examination in such cases.

Although, there are clear disadvantages (radiation exposure, adverse reactions of contrast agents), CT imaging is the first step in the evaluation of pelvic or abdominal pain.

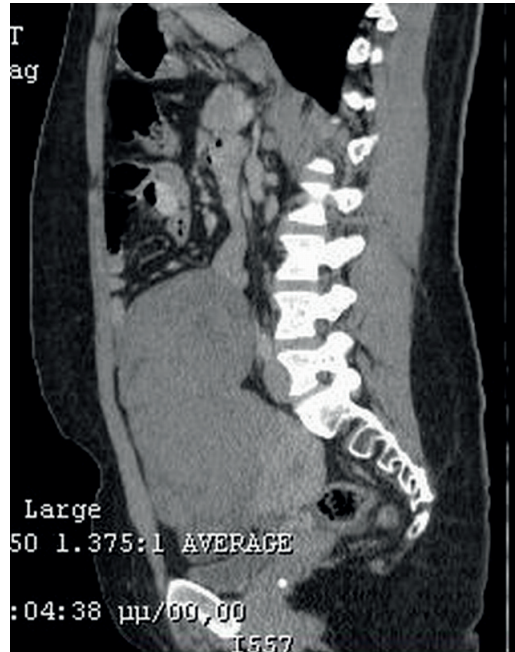


Figure 2. Sagittal CECT shows uterine mass lacking enhancement

Due to the larger field of view with CT, large masses are best characterized with this modality. Patel et al.⁽⁹⁾ suggests that radiologists should have a solid understanding of general principles that clarify when US is or is not helpful after CT scan.

The diagnosis of torsion of a pedunculated subserous myoma on CT is based upon the following criteria: the continuity of the investigated mass in the uterus, the normal appearance of both ovaries, the absence of enhancement of the mass after the intravenous injection of the contrast media and finally the direct presentation of the twisted pedicle suggest the final diagnosis⁽⁵⁾.

Conclusions

The torsion of a pedunculated subserous myoma is an uncommon gynaecological emergency and it should be always part of the surgeon's and radiologist's differential diagnosis when females with acute onset of abdominal and pelvic pain are presented to the ED. ■

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