Cystic Degenerated Uterine Leiomyoma resembling an Ovarian Carcinoma

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Patient: 34 years, female

Clinical History:
A previously healthy 34-year-old female patient was admitted to the hospital with a history of persistent abdominal pain for several months and recent progressive abdominal enlargement.

Imaging Findings:
Physical examination revealed abdominal distention and a palpable mass in the lower quadrant of the abdomen. Transabdominal sonography showed a large cystic mass with multiple thin and thick internal septations and nodular solid components (Fig 1). Laboratory tests did not reveal any abnormalities. Contrast material-enhanced helical CT of the abdomen and pelvis demonstrated a well-circumscribed 17x15x9 cm cystic mass with enhancing irregular septae and solid components that extended from the inferior pole of the horseshoe kidney to the pelvis just above the bladder. The cystic areas were quite homogeneous, with a CT attenuation value near to that of water. The solid part at the posterior wall of the mass was attached to the uterine fundus (Fig 2). These clinical and imaging findings were indicative of cystic degenerated leiomyoma of the uterus. During surgery, a large abdominopelvic mass arising from the uterine fundus was found and complete resection was performed. Pathology confirmed the diagnosis.

Surgical material was cystic, lobulated and well circumscribed tumoral tissue with 1050 gr weight and about 17 cm diameter. The cut surface had multilocular cysts from 3 mm to 10 cm in diameter containing serous fluid. However, their other scanty area was solid and had a firm and white whorled appearance (Fig. 3a). Microscopically, the tumor had focal cellular, massive cystic degenerative and focal myxoid degenerative areas. It was composed of uniform smooth muscle cells both in cellular and in lose pericystic areas Tumoral cells had uniform nuclei. Mitosis was not detected (Fig. 3b).

Discussion:
Leiomyomas are the most common uterine neoplasm. They are also known as fibroids or myomas. The tumor is benign in nature and is composed of smooth muscle and fibrous tissue (1). They can be classified according to their location as submucosal-subendometrial, intramural-myometrial or subserosal (2). While the former usually projects into the endometrial cavity, the latter may be pedunculated and simulates ovarian neoplasms. Leiomyomas can undergo various types of degeneration as they enlarge. These include hyaline or myxoid degeneration, cystic degeneration, dystrophic calcification, and red degeneration. Among them, hyalinization is the most common type of degeneration, occurring in up to 60% of cases. In this type of degeneration, smooth muscle is replaced by collagen fibers (3). Cystic degeneration occurs in about 4% of leiomyomas, is rare and defined as severe liquefaction of the tumour (4). Ultrasound shows leiomyomas as discrete masses within the myometrium with heterogeneous internal
echos. They can be hypoechoic or isoechoic in comparison to normal myometrium. Leiomyomas are seen as sharply margined lesions within the myometrium, with low signal intensity on both T1-weighted and T2-weighted sequences on MRI. With gadolinium enhancement, most leiomyomas enhance to a lesser degree than the surrounding myometrium and remain well marginated. As they are often found incidentally on CT, familiarity with their unusual CT appearances is important (5). Uterine enlargement with focal masses, which may be submucosal, intramural, or subserosal in location, and uterine contour deformity are the most common CT findings. Solid “mass-type” calcifications in a uterine mass are the most specific sign for a leiomyoma; however, these occur in only 10% of cases.

The first diagnosis to consider in the presence of a large cystic mass with irregular septae and solid nodular components filling the pelvic cavity is ovarian malignancy. Exclusion of an ovarian origin is crucial to make a differential diagnosis. This can be done by demonstrating normal ovaries or demonstrating the continuity of the mass within the uterus on imaging studies. The absence of ascites and other signs of malignancy also favor the diagnosis of leiomyoma. The ovarian vascular pedicle sign on CT is another useful clue in confirming the ovarian origin of a pelvic mass and for differentiating that mass from subserosal uterine leiomyoma (6). Also, serum tumour markers are often elevated in women with ovarian cancer or other malignant tumors, but normal in uterine leiomyomas making the differential diagnosis easy.

The differential diagnosis of cystic degenerated leiomyoma would also include cystic mesothelioma, cystic teratoma, endometriosis, lymphangioma and mesenteric cysts. As a conclusion, recognizing the continuity of the large mass within uterus on imaging studies without ascites and elevated serum tumor markers, a large degenerated cystic leiomyoma can be diagnosed preoperatively.

**Differential Diagnosis List:** Cystic Degenerated Uterine Leiomyoma

**Final Diagnosis:** Cystic Degenerated Uterine Leiomyoma

**References:**


Description: US shows a large cystic mass with multiple irregular septae (arrows) and a solid component (*) filling the pelvic fossa. Origin:
Figure 2

Description: Axial contrast-enhanced CT scans obtained at the level of the inferior pole of horseshoe kidney (a) and pelvis (b-d) show a cystic mass with irregular septae (arrows in b) and nodules (arrowheads in b). The solid component at the posterior inferior portion of the mass had a continuity with uterine fundus (arrow in c). Origin:
Description: Photograph of the sectioned surgical specimen (a) shows a large mass with multilocular cysts and whorled areas. Photomicrograph (original magnification, x 50; hematoxylineosin stain) of the cystic degenerated leiomyoma (b). Origin: