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Case Report

Giant uterine leiomyoma mimicking leiomyosarcoma: a diagnostic dilemma — a case report

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ABSTRACT

Uterine leiomyomas are common benign tumors; however, giant leiomyomas are rare and can mimic malignant uterine neoplasms. We report a case of a 41-year-old nulligravid woman presenting with a massive abdominopelvic mass of uncertain origin. Imaging findings were inconclusive and raised suspicion of leiomyosarcoma. The patient underwent exploratory laparotomy with total abdominal hysterectomy and bilateral salpingectomy. Histopathological and immunohistochemical examination confirmed a benign leiomyoma. This case highlights the diagnostic challenges posed by large uterine masses and emphasizes the importance of histopathology in establishing a definitive diagnosis.

Keywords: Leiomyoma, Leiomyosarcoma, Pelvic mass, Histopathology, Uterine tumor

INTRODUCTION

Uterine leiomyomas are the most common benign tumors of the female genital tract and affect up to 70-80% of women by the age of 50 years. They arise from the smooth muscle cells of the myometrium and their growth is influenced by estrogen and progesterone. Most leiomyomas are asymptomatic and remain small; however, a subset may attain enormous dimensions and present with pressure symptoms, abdominal distension, or complications related to adjacent organ compression.[1-3]

Giant uterine leiomyomas are uncommon in modern clinical practice because most fibroids are detected and treated before reaching extreme sizes. Large leiomyomas may undergo secondary degenerative changes such as hyaline, cystic, myxoid, or red degeneration, resulting in atypical radiological appearances that complicate diagnosis.[4,5]

Uterine leiomyosarcoma is a rare but highly aggressive malignant smooth muscle tumor accounting for approximately 1-2% of uterine malignancies. Preoperative differentiation between leiomyoma and leiomyosarcoma remains challenging because clinical presentation and imaging findings often overlap.[6,7] Features such as rapid growth, large tumor size, heterogeneous appearance, and areas of necrosis may raise suspicion of malignancy but are not diagnostic. Histopathological examination remains the gold standard for definitive diagnosis.[6,8]

We report a case of a giant uterine leiomyoma weighing 11.5 kg that clinically and radiologically mimicked leiomyosarcoma, creating a significant diagnostic dilemma.

CASE REPORT

A 41-year-old unmarried, nulligravid woman presented with progressive abdominal distension for approximately 18 months, associated with mild abdominal discomfort and gastrointestinal symptoms. The pain was dull, non-radiating, and persistent.

Her menstrual cycles were regular, occurring every 30 days with a duration of 4-5 days, accompanied by mild

dysmenorrhea. There was no personal or family history of malignancy. The patient had a history of bilateral lower limb poliomyelitis in childhood.

On physical examination, a large, firm abdominopelvic mass measuring approximately 25×15 cm was palpated, occupying almost the entire abdomen.

Investigations

Routine haematological and biochemical investigations were within normal limits. Tumor markers, including serum CA-125 and other relevant markers, were not elevated. Ultrasonography was unable to clearly determine the origin of the mass because of its large size.

Contrast-enhanced computed tomography revealed a large heterogeneous abdominopelvic mass causing marked displacement of surrounding abdominal structures. Both ovaries could not be visualized separately. No evidence of ascites, lymphadenopathy, distant metastasis, or invasion of adjacent organs was observed. Pulmonary function testing demonstrated combined obstructive and restrictive ventilatory defects, suggesting significant diaphragmatic compromise due to the large intra-abdominal mass and increasing perioperative risk.

Management

After obtaining informed high-risk consent, including the possibility of intraoperative complications, exploratory laparotomy was performed under general anaesthesia.

Intraoperatively, a large, well-defined mass measuring approximately 25×15×20 cm arising from the pelvis was identified. A total abdominal hysterectomy with bilateral salpingectomy was performed, and the mass was removed completely.

Following removal of the mass, the patient's respiratory parameters improved significantly.

Histopathological findings

Gross examination revealed a large encapsulated tumor weighing approximately 11.5 kg, with cystic, edematous, and hyalinized areas.

Microscopic examination showed interlacing bundles of smooth muscle cells without nuclear atypia, mitotic activity, or necrosis. Immunohistochemistry demonstrated positivity for desmin, smooth muscle actin, calponin, CD10, and S100, with a low Ki-67 index (~2%), confirming the diagnosis of leiomyoma.

Postoperative course

The patient was monitored in the intensive care unit postoperatively. Her recovery was uneventful, and she was discharged in stable condition.

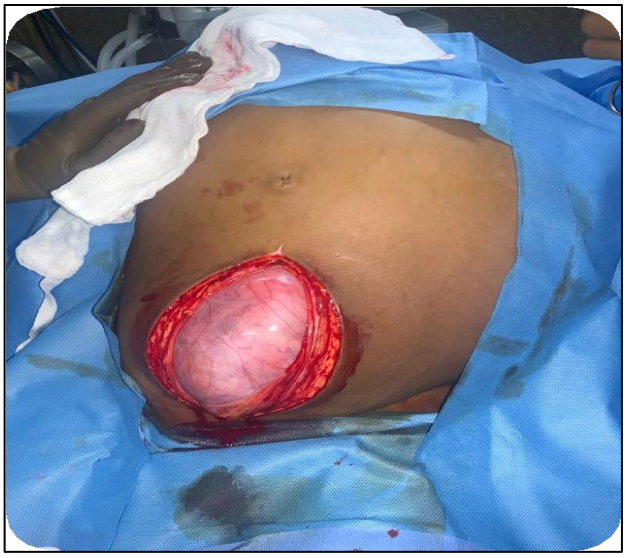

Figure 1: A large, firm abdominopelvic mass.

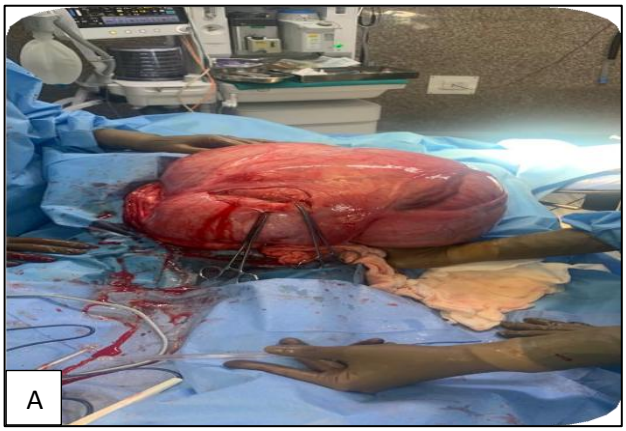

Figure 2: A) A large encapsulated tumor weighing approximately 11.5 kg. B) Monitoring of patient.

DISCUSSION

Giant uterine leiomyomas are rare entities and are generally defined as leiomyomas exceeding 11.4 kg in

weight or 17 cm in diameter.[1] Such tumors may present with symptoms related to mass effect rather than gynecological complaints, thereby posing significant diagnostic and therapeutic challenges.

In the present case, the tumor measured approximately 25×15×20 cm and weighed 11.5 kg. The enormous size, heterogeneous radiological appearance, and inability to determine its exact origin on imaging raised strong suspicion for leiomyosarcoma. Similar diagnostic difficulties have been reported by Kalyan and Sharma, who described giant leiomyomas presenting with features suggestive of malignancy.[1]

Radiological differentiation between leiomyoma and leiomyosarcoma remains problematic. Although magnetic resonance imaging may provide additional information regarding tumor architecture, no imaging modality can reliably distinguish benign from malignant smooth muscle tumors in all cases. Giuntoli et al emphasized that definitive diagnosis of leiomyosarcoma requires histopathological assessment because clinical and radiological findings are often nonspecific.[6]

The present case also demonstrated significant respiratory compromise due to the massive intra-abdominal tumor burden. Pulmonary function tests revealed combined obstructive and restrictive defects, which improved following surgical excision. Similar physiological effects have been reported in patients with giant leiomyomas, where compression of the diaphragm and abdominal viscera leads to respiratory and gastrointestinal symptoms.[4]

Histopathological examination remains the cornerstone for diagnosis. The absence of cytological atypia, coagulative tumor cell necrosis, and elevated mitotic activity, together with a low Ki-67 proliferative index, confirmed the benign nature of the lesion in our patient. These findings are consistent with established pathological criteria distinguishing leiomyoma from leiomyosarcoma.[6,8]

Surgical excision remains the treatment of choice for giant leiomyomas, particularly when malignancy cannot be excluded preoperatively. In the present case, total abdominal hysterectomy with bilateral salpingectomy provided both definitive treatment and accurate diagnosis. The favorable postoperative outcome further highlights the effectiveness of surgical management in such cases.

CONCLUSION

Giant leiomyomas can present as diagnostic dilemmas due to their resemblance to malignant tumors. Histopathological examination remains the gold standard for diagnosis. Timely surgical intervention ensures both diagnostic clarity and favorable patient outcomes.

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