

The Wandering Leiomyoma with Unusual Imaging Findings: A Rare Presentation

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ABSTRACT

Fibroid is the most common uterine tumor seen in women of the reproductive age group. Broad ligament fibroids are very rare extra-uterine fibroid. Usually, extra-uterine fibroids arise from the genitourinary tract like urinary bladder, urethra, ovary, or vulva. These extra-uterine fibroids may mimic malignancies. Appropriate use of imaging modalities and awareness of unusual presentation may prevent serious diagnostic error and potentially harmful management. We report an incidentally detected case of wandering leiomyoma with unusual imaging findings in 27 years old nulliparous female during her infertility work up.

Key words: Fibroid, Wandering leiomyoma, Nulliparous

INTRODUCTION

Fibroids are the most common benign neoplasm of the uterus. Occasionally, the diagnosis of fibroids or leiomyomas becomes more challenging both radiologically and clinically. The exceptions of usual growth pattern of leiomyomas are parasitic leiomyomas, retroperitoneal leiomyomas, Benign metastasizing leiomyomas, intravenous leiomyomas, and disseminated peritoneal leiomyomatosis. [1] Parasitic leiomyomas are usually seen in women of child bearing age. The International Federation of Gynaecology and Obstetrics (FIGO) classification system categorized these parasitic leiomyomas as

Type-8 leiomyomas with no myometrial involvement and uterine attachment. [2]

Parasitic leiomyomas may adhere to surrounding structures like broad ligament, omentum, or retroperitoneal connective tissues and do not show any attachment to the uterus. [3] They also develop auxiliary vascular supply.

CASE PRESENTATION

A 27-year-old nulliparous female attended obstetrics and gynecology OPD with symptoms of lower abdominal pain and inability to conceive even after 7 years of married life. She had no history of menstrual irregularity. There was no history of fever, weight loss, and change in urinary or bowel habits. She did not have any history of prior surgery. There was no family history of breast or gynecological malignancy. The clinical examination was essentially normal and she was advised to undergo pelvic sonography examination.

Trans-abdominal and transvaginal ultrasound was performed on GE Logiq P5. The sonographic examination revealed, a well-defined oval-shaped hypoechoic solid mass lesion measuring 2.5 cm x 3.6 cm x 3.4 cm (AP x TR x CC) in the right adnexal region (Figure-1). Both the ovaries and uterus are seen separately from the lesion. The lesion does not show any cystic changes or calcific foci within. On color doppler images, the lesion shows internal vascularity (Figure-2).

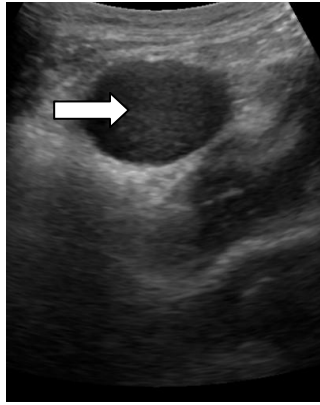


Figure-1: On USG, a well-defined oval shaped hypoechoic mass lesion in right adnexal region.

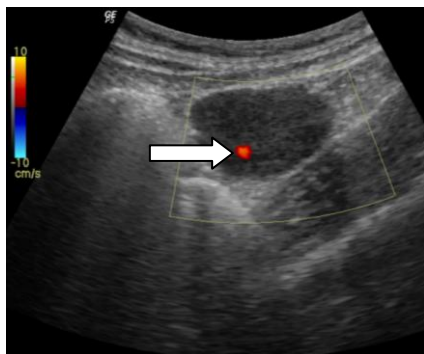


Figure-2: On colour doppler images, the lesion shows internal vascularity.



Figure-3a: On non-contrast CT, a well-defined hypodense mass lesion (precontrast average attenuation HU~38).



Figure-3b: On contrast enhanced CT, Well-defined heterogeneously enhancing mass lesion (postcontrast average attenuation HU~129).

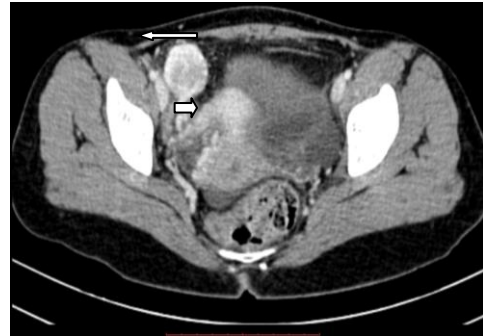


Figure-4: The lesion is supplied by vessels from right ovarian pedicle (Thick arrow) and draining into the right gonadal vein (Thin arrow).

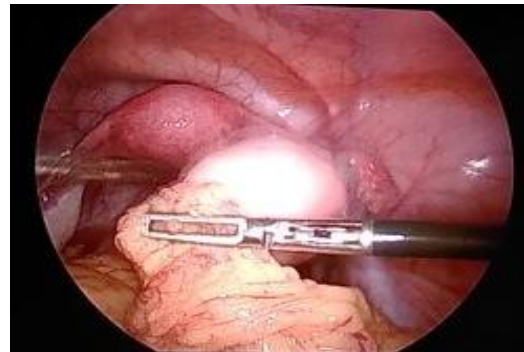


Figure-5: Intra-operative image showing the mass is attached to omentum.

The patient was advised for computed tomography (CT) of the pelvis for better characterization of lesions. Non-contrast CT followed by contrast enhanced CT pelvis was done. Which revealed, a well-defined round to oval-shaped heterogeneously enhancing mass lesion (precontrast average attenuation HU~38 and postcontrast average attenuation HU~129) in the right adnexal region (Figure-3a and 3b). The lesion is related to the right ovary on its posterior aspect, the uterine fundus on its medial aspect, right external iliac vessels on its lateral aspect, superiorly it is related to the small bowel and infero-medially it is related to the urinary bladder. Fat planes with these structures are well maintained. The lesion is seen to be supplied by vessels from the right ovarian pedicle and draining into the right gonadal vein (Figure-4). CT features are suggestive of a Right adnexal mass of benign etiology likely wandering leiomyoma.

The patient was planned for exploratory laparotomy. Preoperative investigations including CA-125 were

within normal limits. Intra-operatively mass was seen to attach with omentum (Figure-5). As there was no evidence of involvement of uterus, ovaries, fallopian tubes, and other surrounding intra-abdominal structures, lymph node dissection was not performed. The mass was completely removed after ligation of feeding vessels. Histopathological report confirms the diagnosis of wandering leiomyoma. The patient showed uneventful recovery postoperatively.

DISCUSSION

The uterine leiomyoma is the most common benign tumor of the pelvis in females of childbearing age group. However, parasitic leiomyoma is a rare extra-uterine benign tumor. Pathogenesis of parasitic leiomyoma is still not well known, however many theories are described in various studies. In 1909, Kelly and Cullen first described the parasitic leiomyoma as “myoma that have for some reason become partially or almost completely detached from the uterus and receive their main blood supply from another source”.^[4]

One theory says that these parasitic leiomyomas are rare variants of pedunculated subserosal leiomyomas.^[5] Further, these leiomyomas lose their uterine blood supply and get adhere & fed by non-uterine structures such as broad ligament and omentum. Finally, they develop auxiliary vascular supply. There is another rare condition known as leiomyomatosis peritonealis disseminata in which multiple nodular leiomyomas are implanted on the peritoneal surface.^[6] Another theory says, parasitic leiomyoma may occur as a result of iatrogenic seeding of leiomyoma during myomectomy or hysterectomy.^[7]

Usually, wandering leiomyomas are asymptomatic or have atypical presentations. This makes it difficult to diagnose clinically as well as radiologically and create a diagnostic dilemma. Sometimes wandering fibroid may cause mass effect on the urethra, bladder neck, or ureter, and producing symptoms of varying degrees of

urinary outflow obstruction or secondary hydronephrosis.^[8]

The radiological examination plays an important role to diagnose wandering fibroid. Transvaginal sonography allows clear visualization of mass and its separation from the uterus and ovaries. It may mimic various ovarian masses, lymphadenopathy, broad ligament cysts, or peritoneal inclusion cyst on ultrasound.^[9] Contrast-enhanced computed tomography is helpful to characterize the parasitic leiomyoma and distinguish it from the various other types of unusual growth of leiomyomas & malignant tumors. Parasitic leiomyoma, disseminated peritoneal leiomyomatosis, intravenous leiomyomatosis, benign metastasizing leiomyoma, and retroperitoneal leiomyomatosis are known rare variant of unusual growth of leiomyomas^[1]

Magnetic resonance imaging is also extremely important in differentiating wandering fibroid from ovarian tumors, tumors of fallopian tubes, broad ligament cyst, and solid malignant pelvic tumors. The broad ligament fibroids are associated with pseudo-Meigs syndrome with raised CA-125 levels; this condition may mimic metastatic ovarian carcinoma.^[10] Typical leiomyomas appear hypo to isointense on T1-weighted images and hypointense on T2-weighted images.^[11] Once diagnosed, excision is the treatment of choice for wandering leiomyoma, and the laparoscopic approach is adopted most commonly.^[12]

CONCLUSION

Wandering leiomyomas are rare extra-uterine unusual growth of leiomyomas. Often, the patient presents with atypical clinical features or may be asymptomatic. They are very difficult to diagnose clinically as well as radiologically. That is why, they create a diagnostic dilemma. Clinicians and radiologists should be aware of the unusual growth pattern of leiomyomas and should be included in the differential diagnosis of pelvic tumors of female patients.

Conflict of interest: None to declare.

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