



Cystic Degeneration of Uterine Fibroid Mimicking a Malignant Uterine Neoplasm on MRI

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Abstract

Uterine leiomyomas or fibroids are the most common neoplasm of the uterus. These are commonly encountered in middle aged women in the reproductive age group. Depending upon the location within the uterus and their size, fibroids can be symptomatic or asymptomatic. The common symptoms are of abnormal vaginal bleeding and pain. Fibroids can undergo secondary changes like hyaline, cystic or red degeneration, calcification and sarcomatous transformation and imaging features in these conditions can mimic different pelvic pathologies.

Keywords: Cystic degeneration, Leiomyoma, Magnetic resonance imaging (MRI), Uterine fibroid, Ultrasonography.

1 Introduction

A 45 year old woman presented with complaints of diarrhea and lower abdominal pain for the last 15 days. She had no history of fever or vomiting. Her vital signs were stable, she was conscious and oriented. Physical examination was unremarkable. Per vaginal examination revealed a bulky and mobile uterus.

Ultrasound showed a large predominantly cystic lesion with thin septations and a mural nodule within it in the right adnexae adjacent to the uterus. No significantly increased vascularity is noted within this lesion (Fig 1). A diagnosis of complex right adnexal cyst was made and further evaluation with MRI was advised.



Fig 1: Ultrasonography shows a complex right adnexal cystic lesion with solid component. No increased vascularity was demonstrated on colour Doppler imaging.

MRI pelvis shows a large heterogeneous intensity lesion having both solid and cystic components arising from the anterior myometrial wall. The solid component shows uniform enhancement on post contrast images (Fig 2 & 3). No evidence of fat or calcification was noted within this mass. Both ovaries are separately seen and are normal.



Fig 2: Sagittal T2 W MR image shows a well defined cystic lesion in the anterior myometrial wall, having a central solid component



Fig 3: Post contrast axial T1 Fat sat MR image shows enhancement of the solid portion of the uterine SOL along with thin septations. Homogenous enhancement of the rest of the uterine myometrium is also noted.

2 Discussion:

Uterine fibroids are the most common uterine neoplasms and are seen in middle aged women. They have a prevalence of 20-30% in patients over 30 years and seen in more than 40% of women over the age of 40 years [1,3]. And they account for approximately 30% of hysterectomies done in the USA annually [1].

Fibroids are often multiple and are solitary in only 2% of cases. Based on their location within the uterus, fibroids are divided into three types: submucosal, intramural and subserosal. Submucosal fibroids are the least common (5%) and are commonly symptomatic, associated with dysmenorrhea, menorrhagia and infertility [1]. Intramural fibroids are the most common and are mostly asymptomatic. They may cause infertility due to extrinsic compression of the fallopian

tubes. Subserosal fibroids are also usually asymptomatic but large pedunculated fibroids may undergo torsion and cause abdominal pain. These can mimic ovarian or adnexal masses on imaging. 8% of fibroids occur in the cervix [1].

2.1 Ultrasonography

Ultrasound is the initial imaging modality to evaluate suspected pelvic pathology. On sonography, fibroids appear as well circumscribed, rounded hypoechoic homogenous masses. Large submucosal fibroids can distort the endometrial stripe. Degenerated uterine fibroids may be mistaken for adnexal or ovarian masses. A case of cystic degeneration of fibroid mimicking a missed abortion has also been reported [4].

2.2 MR imaging

On T1 weighted images fibroids appear iso-hypointense to the myometrium and hypointense on T2 images. Following contrast administration fibroids may or may not show enhancement, depending upon the degree of degeneration. The cellular type of fibroids show uniform enhancement.

The differential diagnosis for a complicated uterine fibroid includes adenomyosis, solid adnexal mass, focal myometrial contraction and uterine leiomyosarcoma [1,3]. Leiomyosarcomas are rare complications of fibroids occurring in <1% of cases.

Specific types of unusual uterine leiomyomas have also been described. These include entities such as lipoleiomyoma, myxoid leiomyoma, parasitic leiomyoma, intravenous leiomyomatosis and metastasizing leiomyoma [2].

In our patient a thin myometrial rim seen covering the mass demonstrates the uterine origin. The mass has solid and cystic components with intense post contrast enhancement of the solid portion. This feature raised a possibility of the mass being a malignant neoplasm or a sarcomatous transformation of a uterine fibroid. The patient underwent a total abdominal hysterectomy. HPE showed no evidence of malignant change and revealed a cellular intramural degenerating leiomyoma.

3 Conclusion

Uterine fibroid with cystic degeneration can mimic a host of pelvic disorders, like solid or cystic ovarian neoplasm, hydrometra, pregnancy, malignant neoplasm of the uterus and cervix both on clinical examination and sonography. MRI is the imaging modality of choice and the knowledge of the imaging appearances of uterine fibroids undergoing degeneration would help in reaching the correct diagnosis.

References

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