Large Cystic Degeneration of Subserosal Fibroid and Diagnostic Dilemma

Nihar Ranjan Bhoi, Chintamani Mohanta, Sudha Agrawal, Amulya Kumar Panda

ABSTRACT

Introduction: Leiomyoma of the uterus is the most common tumor arising from uterine smooth muscle. The size varies from microscopic to giant. We report an unusual case of a large myoma with cystic degeneration mimicking an ovarian tumor.

Presentation of case: A 49-year-old nulliparous woman presented with a history of dull aching lower abdominal pain and gradual swelling of abdomen for a period of approximately 6 months. She had no history of serious illness or surgical procedures and no family history of malignancies. Clinical examination revealed a cystic mass spreading all the quadrants of abdomen and no shifting dullness could be elicited. Sonography examination showed a large mass that filled the abdomen. A provisional diagnosis of a benign ovarian tumor was made. The patient underwent laparotomy, an enlarged, complex and predominantly cystic tumor arising from the posterior wall of uterus with bilateral normal tubes and ovaries. Total hysterectomy and bilateral salpingo-oophorectomy was done. The histology revealed a leiomyoma with cystic degeneration.

Discussion: Cystic degeneration of large fibroid mimics ovarian tumor both clinically and ultrasonographically.

Conclusion: Pedunculated leiomyomas should be considered in the differential diagnosis of a multilocular and predominantly cystic adnexal mass.

Keywords: Adnexal mass, Cystic degeneration, Elastography, Giant myoma, Uterine leiomyoma.

INTRODUCTION

There is, perhaps, no pathological condition which has received greater attention of late years from gynecologists than that known as fibroid disease of the uterus.

The above sentence has been quoted in British medical journal by Dr Protheroe Smith long back in 1872, impressing upon the well known history of fibroid uterus.¹

Leiomyoma of the uterus is the most common tumor, which arises from uterine smooth muscle. Such tumors are found in nearly 50% of women over age 35. The prevalence increases during reproductive age and decreases after menopause. The size varies to a great extent from microscopic to giant. Giant myomas are exceedingly rare nowadays. Appropriate surgical management is necessary to obtain a good result after removal. Here, we present a case of a woman with giant uterine myoma that had undergone cystic degenerative changes, mimicking an ovarian tumor.

PRESENTATION OF CASE

A 49-year-old nulliparous woman presented with a history of dull aching lower abdominal pain and distension for a period of approximately 6 months. She had no history of serious illness or surgical procedures and no family history of malignancies. Her vital signs were all within normal limits. Abdominal examination revealed a huge abdominal mass quite obvious from the figure given below (Fig. 1).

![Preoperative picture of the patient, impressing upon the size of the tumor](image-url)
No abdominal tenderness was present. Dull note over the mass without any shifting dullness was suggestive of cystic swelling. The external genitalia and uterine cervix were normal, the fornices of the vagina were free on pelvic examination. The size of uterus could not be elicited. It was difficult to specify the origin of the tumor. An abdominal sonogram revealed a large, complex and predominantly cystic mass, approximately $35 \times 30$ cm in size, occupying the whole abdomen. There were multiple fine septations. Ovaries could not be visualized. A computed tomography (CT) scan of the abdomen and pelvis showed a large semisolid mass that was found adjacent to the uterus without any calcification. There was no regional or para-aortic lymphadenopathy (Fig. 2).

The results of routine laboratory testing including a complete blood count, serum electrolyte levels, tests of liver and renal function and the tumor markers were within normal limits. Pap smear showed no atypical cell. From clinical examination, sonographic finding, CT findings and tumor marker, a benign ovarian tumor was the most likely diagnosis.

An abdominal midline vertical incision was made. At laparotomy, we found an enlarged, complex and predominantly cystic tumor arising from the posterior wall of uterus that filled the entire abdomen. Approximately, 9 l of bloodstained fluid was drained out from the mass. Flimsy adhesions between the mass and bowel and omentum were noted. A total hysterectomy and bilateral salpingo-oophorectomy were performed after adhesiolysis. The specimen was sent for histopathological evaluation. A closed drain was placed into the pelvis after obtaining hemostasis. There was no intraoperative complication. The drain was removed on the first postoperative day, postoperative hospital stay was uneventful and the patient was discharged on 8th postoperative day.

Gross pathologic examination revealed a smooth, multiloculated cystic mass arising from the posterior wall of uterus, measuring $35 \times 35 \times 25$ cm with brownish liquid contents. The uterus was enlarged to $15 \times 12 \times 11$ cm. On cut section, it was revealed that the cavity of the cystic lesion was extending into myometrium. The myometrium was hypertrophic with normal endometrium and endocervical canal. Bilateral ovaries and tubes were normal (Figs 3 and 4).

Microscopic examination revealed leiomyoma with areas of cystic degeneration. Histologic signs of malignancy were not found. The final diagnosis of subserous uterine leiomyoma with marked cystic degeneration was made (Fig. 5).

**DISCUSSION**

Based on location, leiomyomas are classified as submucosal, intramural or subserosal. The latter may be pedunculated and simulates ovarian neoplasms. Large uterine fibroids can cause pain, constipation, increased frequency of micturition and menstrual bleeding. They
can also affect reproduction by causing infertility, miscarriage and/or premature labor. As leiomyomas enlarge, they can outgrow their blood supply, resulting in various types of degeneration, such as hyaline, cystic, myxoid or red degeneration and calcification. Hyalinization is the most common type of degeneration, occurring in up to 60% of cases. Cystic degeneration, observed in about 4% of leiomyomas, may be considered extreme sequelae of edema. Rapid growth of leiomyoma, caused by its transformation into sarcoma, takes place in about 0.1 to 0.8% of all cases.

Nonovarian cystic pelvic lesions that may be considered in differential diagnosis of ovarian neoplasm include peritoneal inclusion cysts, paraovarian cysts, mucocele of appendix, hydrosalpinx, subserosal, or broad ligament leiomyomas with cystic degeneration, cystic adenomyosis, cystic degeneration of lymph nodes, hematoma, abscess, spinal meningeal cysts, and lymphoceles, retroperitoneal leiomyomas. Four percent of fibroids undergo cystic degeneration with extensive edema forming cystic, fluid-filled spaces. In such cases, vessels bridging the mass and the myometrial tissue, termed bridging vessel sign is useful in diagnosing the case as leiomyoma.

The preferred imaging modality for the initial evaluation is ultrasonography because it is the least invasive and the most cost-effective. The relative echogenicity of leiomyomas depends on the ratio of fibrous tissue to smooth muscle, the extent of degeneration and the presence of dystrophic calcification. A CT scan can be useful; however, leiomyomas are indistinguishable from healthy myometrium unless they are calcified or necrotic. Although fibroids usually have a characteristic sonographic appearance, degenerating fibroids can have variable patterns and pose diagnostic challenges. A pedunculated, subserosal uterine leiomyoma with extensive cystic degeneration can mimic an ovarian tumor. Magnetic resonance imaging may be helpful in complicated cases but, availability and high cost are serious limitations, so should not be used indiscriminately. Clinical and sonographic correlation, together with knowledge of the variable sonographic appearance of degenerating fibroids, generally can lead to the correct diagnosis of uterine leiomyoma.

Pelvic magnetic resonance imaging may be helpful in these cases, since it clearly demonstrates tumor number, size, location, and the presence and extent of degeneration. The ‘age index’ shows that normal uterine tissue has a certain age-dependent stiffness that increases with age. The ‘lesion index’ allows for the assessment of the presence of a uterine fibroid or adenomyosis and helps to differentiate between both focal findings. Thus, the use of elastography in addition to conventional ultrasound could help to diagnose uterine focal lesions and may be useful in preoperative planning.

Sonography may or may not be able to focus the details needed for differentiation between ovarian and extraovarian masses because of many factors, such as (1) limited field of view and (2) inability to view the relationships of large masses with the uterus or ovary. In this case, sonography was unable to view the entire mass (due to large size) from all sides. Therefore, the impression was that of a thin-walled cyst. The portion of the wall, which blended with fundus of uterus, could not be visualized with sonography. Elastography in addition to conventional ultrasound could help to diagnose uterine focal lesions and may be useful in preoperative planning.

Meticulous perioperative management and multidisciplinary patient care are essential to prevent morbidity and mortality.

CONCLUSION

Although fibroids typically have a characteristic ultrasonography (USG) appearance, degenerating fibroids can have variable patterns and pose diagnostic challenges. This case represents an unusual case of a pedunculated leiomyoma masquerading as an adnexal mass. Pedunculated leiomyomas should be considered in the differential diagnosis of a multilocular and predominantly cystic adnexal mass.

REFERENCES

Large Cystic Degeneration of Subserosal Fibroid and Diagnostic Dilemma


