Broad Ligament Fibroid: A Case Series

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INTRODUCTION

Fibroids or leiomyomas are the most common pelvic tumors present in 20% of women in the reproductive age. These are composed of smooth muscle with a variable amount of fibrous connective tissue. They may be uterine or extraterine in origin. Extra-uterine fibroids are rare and may arise in the broad ligament or at other sites where smooth muscle exists.¹² Broad ligament tumors are mostly epithelial in nature, whereas mesenchymal tumors are less common. The most common mesenchymal tumors of the broad ligament are leiomyomas.³ The real incidence of broad ligament fibroids is not known. They may cause a variety of symptoms such as menstrual irregularities and pressure effects.¹³ We describe four patients with broad ligament fibroids, one of whom presented with a diagnostic dilemma pre-operatively.

CASE REPORT

A 46-year-old woman presented with increasing abdominal distension and pain since 6 months and menorrhagia for 3 months. There was no weight loss, anorexia, fever or bowel, and bladder complaints. On examination, the patient was afebrile, pulse 76/min, and blood pressure 130/80 mmHg. Abdominal examination revealed a mass of 28-30 weeks size, arising from the pelvis. It had irregular margins, varied consistency, and was non-tender. On speculum examination, the cervix could not be visualized. On vaginal examination, the mass was felt pushing the cervix to the left. Forniceal fullness was present but no tenderness. Routine blood analysis was within normal limits. Serum carcinoembryonic antigen - 125 was 12.10 IU/ml (normal <35 IU/ml). Ultrasonography (USG) of abdomen showed a well-defined lesion in the midline, of mixed echogenicity, (18 cm × 14 cm × 15 cm), pushing the uterus to the left, and extending cranially up-to mid-abdomen with multiple areas of necrosis. There was moderate to gross internal vascularity. The right ovary was not seen separate from the mass. Right hydro ureter and hydronephrosis were also present. A diagnosis of right ovarian neoplasm was made. A plain and postcontrast high resolution spiral computed tomography (CT) scan of the abdomen and pelvis showed a large mass, 21.57 cm × 19.53 cm × 18.0 cm (Figure 1) in the pelvis extending superiorly into the abdomen displacing bowel loops. This was heterogeneous with areas of necrosis seen along peripheral aspects of the lesion particularly along the right lateral aspects. The right ovary was not seen separately. The uterus was pushed toward the left. Compression of the right lower ureter with resultant dilatation of proximal ureter and right renal pelvis was seen. The mass lesion was flush with the fundus of the uterus raising the possibility of a large fundal myoma. However, the possibility of ovarian neoplasm could not be excluded.

The patient was taken up for an exploratory laparotomy. Intra-operatively, an abdominopelvic mass of approximately
20 cm × 20 cm × 18 cm was seen with variable consistency and increased vascularity, arising from the right side of the uterus pushing the uterus to the left (Figure 2). Right fallopian tube, ovarian ligament, and round ligament stretched over the mass. Right ovary, left tube, and left ovary were normal. Small bowel and omentum were adherent to the mass. As the tumor was distorting the pelvic anatomy, careful dissection was done to prevent ureteric injuries. Excision of the tumor with a total hysterectomy and right salpingo-oophorectomy was done. The patient required three pints of whole blood intra and post-operatively. The post-operative course was otherwise uneventful. The specimen weighed 7.5 kg. Gross examination of the cut section showed solid fleshy areas and cystic areas filled with blood. Histopathology was suggestive of leiomyoma.

The clinical features of the other three patients are summarized in Table 1.

**DISCUSSION**

About 50% of patients with fibroids remain asymptomatic and are usually diagnosed by physical examination or by pelvic imaging. Extra-uterine fibroids are rare as compared...
Table 1: Summary of other three cases of Broad Ligament Fibroid

<table>
<thead>
<tr>
<th>Case 2</th>
<th>Case 3</th>
<th>Case 4</th>
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<tbody>
<tr>
<td>Age in years</td>
<td>50</td>
<td>42</td>
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<tr>
<td>Symptoms</td>
<td>Postmenopausal bleeding per vaginum - 2 months D and C done showing endometrial hyperplasia</td>
<td>Pain and heaviness in lower abdomen - 3 months</td>
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<tr>
<td>Clinical findings</td>
<td></td>
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<tr>
<td>Per abdomen</td>
<td>Mass of 14 weeks size arising from pelvis firm in consistency and non-tender</td>
<td>No mass palpable</td>
</tr>
<tr>
<td>Per speculum</td>
<td>Cervix and vagina healthy</td>
<td>Cervix not visualised</td>
</tr>
<tr>
<td>Per vaginal</td>
<td>Cervix pushed toward left</td>
<td>A firm mass of 10 cm x 10 cm in left fornix</td>
</tr>
<tr>
<td>USG pelvis</td>
<td>10 cm x 10 cm mixed echogenic lesion in right lateral wall suggestive of broad ligament fibroid</td>
<td>10 cm x 10 cm lesion in left lateral wall and 4 cm x 4 cm lesion in right adnexa with mixed echogenicity</td>
</tr>
<tr>
<td>CT scan</td>
<td>Not done</td>
<td>Not done</td>
</tr>
<tr>
<td>Intraoperative</td>
<td>Large dumbbell shaped broad ligament fibroid 10 cm x 12 cm loosely adherent to the peritoneum (Figure 3). Fibroid enucleated (after tracing the course of ureter), TAH with BSO done</td>
<td>Uterus enlarged, right ovary 5 cm x 5 cm, cystic. Two broad ligament fibroids - one on left uterine wall 7 cm x 6 cm second 4 cm x 5 cm in right wall both fibroids enucleated and TAH (Figure 4) with right salpingo-oophorectomy done</td>
</tr>
<tr>
<td>Post-operative</td>
<td>Uneventful</td>
<td>Uneventful</td>
</tr>
<tr>
<td>Histopathology</td>
<td>Endometrial hyperplasia with no evidence of atypia or malignancy and leiomyoma</td>
<td>Endometrial in proliferative phase, leiomyoma and right ovarian follicular cyst</td>
</tr>
</tbody>
</table>

CT: Computed tomography, TAH: Total abdominal hysterectomy, BSO: Bilateral salpingo-oophorectomy, D and C: Dilation and curettage, USG: Ultrasonography

with uterine fibroids, and may be located in the broad ligament, round ligament, cervical, and ovary.

Fibroids in the broad ligament are known to achieve the enormous size and may mimic a malignancy of the pelvis both clinically and radiologically, as in our first patient where the mass weighed 7.5 kg. However, exploration and histopathology confirmed it to be a benign broad ligament fibroid.

Broad ligament fibroids may manifest as a lump in the abdomen, or with pressure symptoms or with menstrual irregularities. In our series, patients 1, 2, and 4 presented with menstrual irregularities. Patient 3 had only pain and heaviness in the abdomen.

Fibroids may be associated with other conditions like follicular cyst of ovary (as in patient 3), endometrial hyperplasia (as seen in patient 2), endometrium carcinoma, and endometriosis.

Diagnoses of broad ligament fibroid are always a challenge. The most useful modalities for detecting extra-uterine leiomyomas are USG, CT, and magnetic resonance imaging (MRI). “Bridging vessel sign” on imaging is helpful in the diagnosis of leiomyoma. Transvaginal ultrasound can diagnose broad ligament fibroid because it allows clear visual separation of the uterus and ovaries from the mass. MRI with its multiplanar imaging capabilities may be extremely useful for differentiating broad ligament fibroids from masses of ovarian or tubal origin and from broad ligament cysts. The distinctive MRI appearances of typical fibroids are useful in differentiating them from solid malignant pelvic tumors.

Because of the location and size of broad ligament fibroids, surgery is challenging, especially since surrounding organs like ureters, intestines, and urinary bladder may be at risk. It is very important that the ureteric course be identified during surgery. Patient 1 presented an operative challenge due to adhesions between the fibroid and surrounding structures. Dissection was difficult because of the large size and the patient required blood transfusion intra- and post-operatively.

CONCLUSION

Although extra-uterine fibroids are rare and histologically benign, they may mimic malignant tumors clinically and on imaging, and may present a diagnostic challenge. The
symptoms and imaging features depend on the location and size of the lesion. A differential diagnosis of extra-uterine fibroid should be considered in the case of pelvic masses with the normal uterus. During surgery, one should be very careful about the ureteric course and surrounding organs.

REFERENCES


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