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Case Report

Spindle cell variant of leiomyoma exhibiting myxoid change and calcification: a rare case report

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ABSTRACT

Uterine leiomyomas, commonly referred to as fibroids, are the most prevalent benign tumors found in women of reproductive age, characterised by the proliferation of smooth muscle cells within the uterus. While the vast majority of leiomyomas are benign, a small percentage (approximately 1%) can undergo malignant transformation into leiomyosarcoma, complicating management and prognosis. Here we report a case of 51-year-old P1L1 presented to the outpatient department (OPD) with complaints of heavy menstrual bleeding for two years. Patient was examined and investigated. On clinical examination, a palpable pelvic mass of approximately 20×15 cm noted measuring about 24 weeks in size. On radiological examination, revealed a heterogeneously hyperechoic solid-cystic lesion measuring 12.5×10.5×7.6 cm with features suggestive of endometrial carcinoma. Total abdominal hysterectomy with bilateral salpingo - oophorectomy. Histopathological examination (HPE) report revealed endometrial hyperplasia without atypia. The myometrium reveals features of adenomyosis and leiomyoma. The subserosal fibroid consists of spindle cells in interlacing fascicles, with areas of calcification and focal myxoid change.

Keywords: Leiomyoma, Endometrial cancer, Myxoid degeneration, Spindle cell

INTRODUCTION

Uterine leiomyomas, commonly referred to as fibroids, are the most prevalent benign tumors found in women of reproductive age, characterised by the proliferation of smooth muscle cells within the uterus. These tumors can vary significantly in size and location, leading to symptoms such as heavy menstrual bleeding, pelvic pain, and pressure effects on adjacent organs. While the vast majority of leiomyomas are benign, a small percentage (approximately 1%) can undergo malignant transformation into leiomyosarcoma, complicating management and prognosis.[1]

Myxoid focal changes in leiomyomas represent a rare but clinically significant alteration that complicates their diagnosis. These changes are characterized by the accumulation of myxoid material within the extracellular matrix, resulting in histological alterations that may mimic malignancy. Specifically, increased cellularity and atypical cellular morphology can raise concerns about a potential diagnosis of leiomyosarcoma. The presence of myxoid degeneration necessitates careful histopathological evaluation to ensure accurate diagnosis and appropriate management, as misinterpretation can lead to inappropriate clinical decisions.[2]

CASE REPORT

Here we report a case of 51-year-old P1L1 presented to the gynaecology out-patient department (OPD) at our hospital with complaints of heavy menstrual bleeding for two years. The bleeding was insidious in onset, heavy flow, 10 to 15 days, 65 to 90 days cycle, soakage of 5-6 pads/day, associated with passage of clots. It is not associated with dysmenorrhea or pain abdomen. Patient is known case of diabetes mellitus controlled on oral hypoglycemic agents. She had no bladder or bowel symptoms and no loss of

weight or appetite. She attained menarche at the age of 13 years and had regular menstrual cycles. She had no past history of hormonal therapy or malignancy and no family history of malignancy.

On clinical examination, she was moderately built, haemodynamically stable having pallor 1+, but had no oedema or lymphadenopathy. Abdominal examination revealed 24-week pregnant uterus size; non tender mass appearing to be arising from the pelvis, around 20×15 cm, hard, non-mobile with irregular borders and lower margins of the mass could not be made out.

No organomegaly or engorged veins or ascites noted. On per-vaginal examination, cervix is pulled up anteriorly and deviated to the left. Fullness is noted in both anterior and posterior fornices.

Blood investigation showed haemoglobin level of 9.8 gm/dl with normal total, differential blood counts, platelets count, renal function test, liver function test, and blood sugar levels. HbA1c level was 6.1.

Transabdominal sonography revealed a heterogeneously hyperechoic solid-cystic lesion measuring 12.5×10.5×7.6 cm. This lesion is located within the endometrial cavity and is distending the uterine cavity, resulting in thinning of the uterine wall, suggestive of endometrial carcinoma.

Magnetic resonance imaging (MRI) shows bulky and heterogeneous uterine dimensions of 20.5×22.5×10.0 cm. Notably, a large solid-cystic lesion is present on the left lateral wall, measuring 19.2×10.6×13.2 cm. Additionally, a hyperintense lesion measuring 5.0×5.4 cm is observed in the right cervix, with mild restricted diffusion noted suggestive of likely endometrial carcinoma.

Histological examination of the endometrial biopsy reveals fragments of ectocervix lined by stratified squamous epithelium, along with a few endocervical glands in a dense haemorrhagic background.

The patient was enrolled for surgery after obtaining consent and pre-anaesthetic evaluation.

Intra-operative findings revealed uterus globally enlarged upto 24 weeks size with smooth surface and irregular borders and the hard mass was seen arising from the posterior wall of the uterus subserosal in location measuring around 10×8 cm looked like a fibroid (Figures 1 and 2).

Bilateral fallopian tubes and ovary normal. She was planned for exploratory laparotomy with frozen section biopsy. Consent was taken for total abdominal hysterectomy with bilateral salphingo-oophorectomy. Patient was also counselled for a second definitive surgery if frozen section was inconclusive. Vertical midline incision was given and abdomen opened. Frozen section reported as benign variant likely leiomyoma.

Figure 1: Uterus with cervix (10×8 cm of mass arising from posterior walls of uterus).

Figure 2: Cut section of the specimen.

In final histopathology, endometrium showed hyperplasia without atypia. Section from myometrium showed adenomyosis and leiomyoma features. Sections from the subserosal fibroid consists of spindle cells in interlacing fascicles, with areas of calcification and focal myxoid change (Figure 3). There was no evidence of infiltrative margins or atypia).

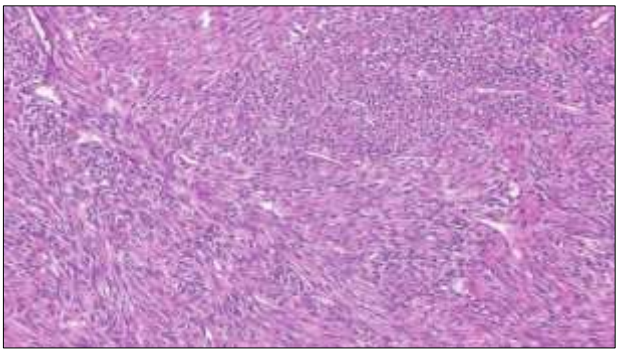

Figure 3: Histopathological picture showing spindle cells in interlacing fascicles, with areas of calcification and focal myxoid change.

DISCUSSION

Uterine leiomyoma is the most common benign smooth muscle tumour of the uterus. These may outgrow their own blood supply, enlarge, and can result in various degenerations like hyaline (60%), cystic (4%), calcified

(4%), red (3%), myxoid (1-3%), sarcomatous degeneration (0.1-0.8%) as per prevalence.[3]

Myxoid focal changes in uterine leiomyomas are notable for their potential to obscure the diagnosis and mimic malignancy. While leiomyomas are predominantly benign, the risk of malignant transformation into leiomyosarcoma—though low—ranges from 0.1% to 0.3% of all uterine tumors, with less than 1% of leiomyomas potentially undergoing such changes, of which the leiomyosarcoma has the worst prognosis. The presence of atypical histological features, particularly myxoid degeneration, can complicate diagnosis and necessitate a high index of suspicion during evaluation. Myxoid is a rare condition composed primarily of smooth muscle cells with significant accumulation of cellular rich acid mucin. Thus, recognising these atypical characteristics is crucial for ensuring accurate diagnosis and appropriate management.[2]

In this case, although radiological investigation gave heterogenous lesion on ultrasonography and high signal intensity on T2 weighed images of MRI likely of endometrial carcinoma. Timely intraoperative frozen section helped in diagnosis of the benign variant of leiomyoma associated with focal myxoid degeneration with calcification.[4]

Areas of myxoid degeneration will appear as heterogeneous and markedly increased signal intensity on T2 weighted images with progressive enhancement after contrast administration. The similar findings in myxoid degeneration and sarcoma are lack of cellular and nuclear atypia and presence of mitotic figures in less than two fields out of ten field on microscopy.[4-6] Myxoid leiomyoma is characterized by absence of mitotic activity and the presence of myogenic phenotype.[7-9]

In this case, the implementation of intra-operative frozen section analysis allowed for prompt assessment and confirmation of the benign nature of the leiomyoma, averting the risk of progression to leiomyosarcoma and extensive surgery as in malignancy. Early surgical intervention, coupled with accurate histopathological evaluation, significantly enhanced the patient's prognosis.

CONCLUSION

This case report underscores the importance of diligent clinical assessment and adherence to established diagnostic standards when managing atypical uterine masses and importance of frozen section to decrease the risk of upstaging of disease, carrying out extensive surgery and patient morbidity. By preventing misdiagnosis and ensuring timely treatment, we can mitigate the risks associated with malignant transformation and improve outcomes for patients presenting with complex gynaecological conditions.

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