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Hydropic degeneration of uterine leiomyoma mimicking a huge ovarian cyst

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ABSTRACT

Introduction: Leiomyomas are very common neoplasms of the female genital tract. Cystic change, an extreme form of hydropic degeneration is a rare clinical presentation. Case Report: We present a case of a 40-year-old woman presenting with progressively increasing abdominal mass and clinical finding of anemia and complex adnexal mass. Excision of mass and histopathologic evaluation revealed complete cystic transformation of the uterine corpus following degeneration of leiomyoma. Conclusion: Degenerating uterine myomas should be included in differential diagnosis of complex adnexal masses in women of child bearing age.

Keywords: Degeneration, Hydropic, Leiomyoma, Ovarian

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INTRODUCTION

Leiomyomas are very common neoplasms of the female genital tract with an overall incidence of 4–11% rising to 40% by age of 50 years [1]. Leiomyomas are also more common in black women, with tendency to be multicentric [1], occurring subserosally, intramurally, and submucosally. Clinical presentation occurs frequently in nulliparous and premenopausal women [1]. Presenting symptoms and signs are dictated by their size, and possibly location to a large extent, and include uterine bleeding, pain, palpable abdominal mass and infertility. Leiomyomas are usually well circumscribed on gross appearance and their cut surfaces appear creamy white with whorled pattern. Microscopy usually reveals interlacing bundles of smooth muscle cells separated by vascularized connective tissue.

Many variations on the afore described basic themes exist. They mostly result from secondary changes and are found in 65% of cases [1], and include hyaline degeneration, myxoid change, calcification, cystic (hydropic) change and fatty metamorphosis.

These degenerative changes are thought to be the consequence of relative ischemia involving regions of the myoma during enlargement [2–4] and may mimic more sinister disease entities.

Hydropic degeneration is characterized by accumulation of oedema fluid with associated collagen deposition presenting with various patterns [5, 6]. Leiomyomas with hydropic change do not have thick smooth muscle cells fascicles but a delicate filigree pattern with oedema fluid as extracellular material [1]. Hydropic changes lead to formation of cystic cavities.

While focal hydropic degeneration may be relatively common, the complete cyst transformation of a myoma is exceptionally rare [2–4]. We report a case of a uterine leiomyoma that had undergone complete cystic

degeneration, thus, clinically mimicking a complex adnexal cyst.

CASE REPORT

A 40-year-old woman, Para 1, whose last confinement was 14 years prior to presentation and presented with a history of progressive abdominal distention of over six years duration. Although there was no associated abdominal pain, she started experiencing generalized malaise and orthopnoea about three weeks prior to presentation. She also had a history of secondary infertility and irregular menstrual periods.

On examination, she was found to be chronically ill-looking and severely pale, with PCV of 21% and was dyspnoeic with respiratory rate of 40cycles per minute. Her pulse rate was 110 beats/minute and regular. There was no pedal oedema. Abdominal examination revealed a grossly distended abdomen and an ill-defined abdominal mass equivalent in size to a 40 weeks gestation. It moved slightly with respiration, with no associated tenderness. No significant findings were made on vaginal examination.

A pelvic USG examination revealed a large complex predominantly cystic mass, approximately 60x40x35 cm arising from the right side of the pelvis with extension to the abdomen. The uterine body was distorted and both ovaries could not be identified separately. A diagnosis of complex cystic ovarian mass was made.

She was subsequently counselled and optimized for exploratory laparotomy. She received 3 units of blood prior to the surgery.

At surgery, the peritoneum was found to be clean with appropriate amounts of fluid. A huge complex mass, with estimated size of approximately 40x30x20 cm, involving the uterus and the ovaries was visualized and total abdominal hysterectomy and bilateral salpingo-oophorectomy was done. She received 3 units of blood during the recovery period and following improved clinical condition was discharged within one week. She has so far remained well post operatively.

Pathological examination revealed grossly, a large, circumscribed mass, reminiscent of a total abdominal hysterectomy and bilateral salpingo-oophorectomy specimen with cystically distorted uterine corpus. The specimen measured 29x24x16 cm and weighed 5370g. A short cervix was seen 1 cm in length with a slit-like os; one fallopian tube and two ovaries were identified. The fallopian tube measured 11 cm and appeared unremarkable. The accompanying ovary measured 8x3x1.5 cm and had partially cystic and partially solid cut surface. The other ovary measured 7x2x0.5 cm and also had partially solid, partially cystic and variegated cut surface. Cut section through the uterus showed unremarkable endocervical canal and the complete cystic degeneration of the corpus into a multiloculated cyst cavity with a smooth inner lining (Figures 1–2).

Microscopic examination of the uterine wall showed attenuated fascicles of smooth muscle cells with prominent oedema and cystic degeneration (Figure 3). Numerous thick-walled blood vessels were present in oedematous stroma. The periphery of the mass showed transition to pre-existing myometrium. The individual cells were plump with enlarged nuclei and bipolar cytoplasm. No mitoses were observed. These features are consistent with hydropic leiomyoma (Figures 4 and 5). Figure 6 shows the external surface of uterus. Figure 7 shows the ovaries showed corpus luteum cyst microscopically.

DISCUSSION

Leiomyomas are benign smooth muscle cell tumours enclosed by a pseudo capsule [7–9]. As the tumour enlarges, foci of degeneration appear due to focal

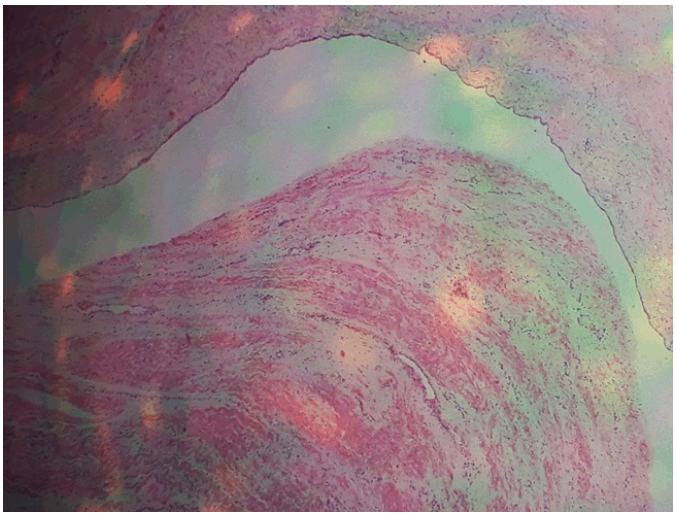

Figure 1: Micrograph of uterine smooth muscle fascicles showing stromal edema and cyst formation (H&E x40).

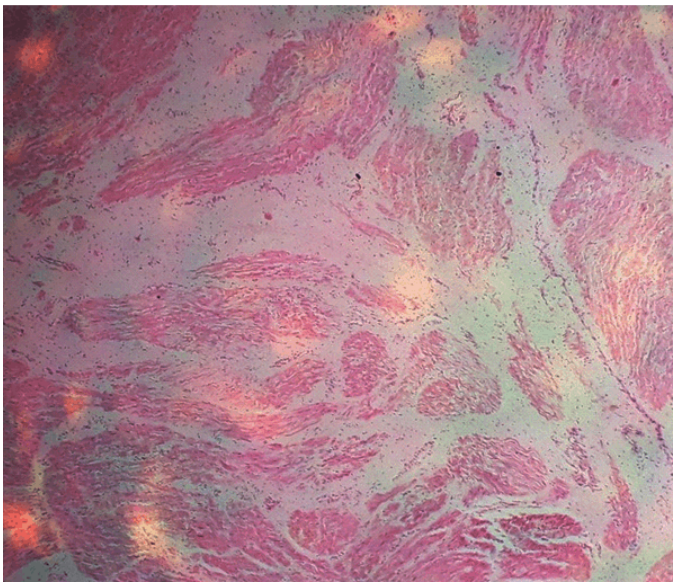

Figure 2: Uterus showing marked stromal edema and plump smooth muscle cells (H&E x40).

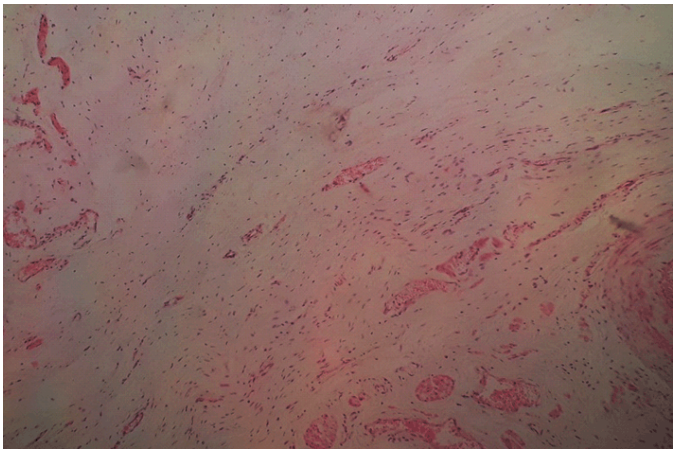

Figure 3: Loose myometrial stroma indicating marked edema in connective tissue (H&E x40).

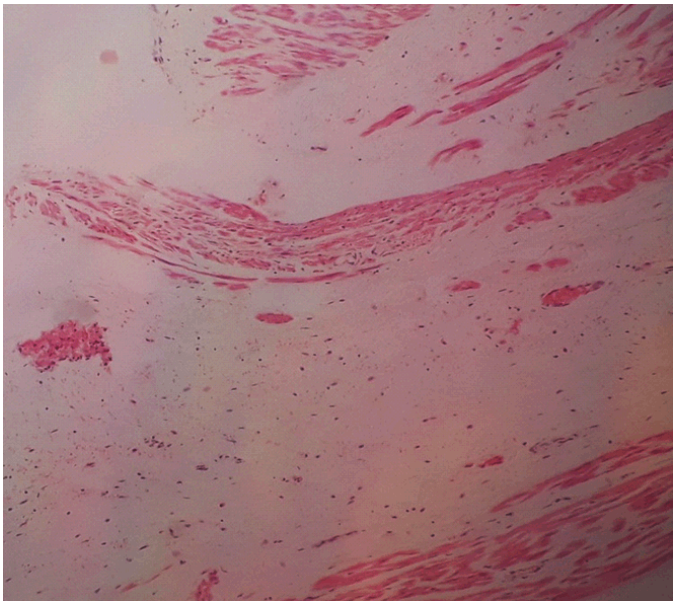

Figure 4: Loose connective tissue stroma of uterine leiomyoma (H&E x40).

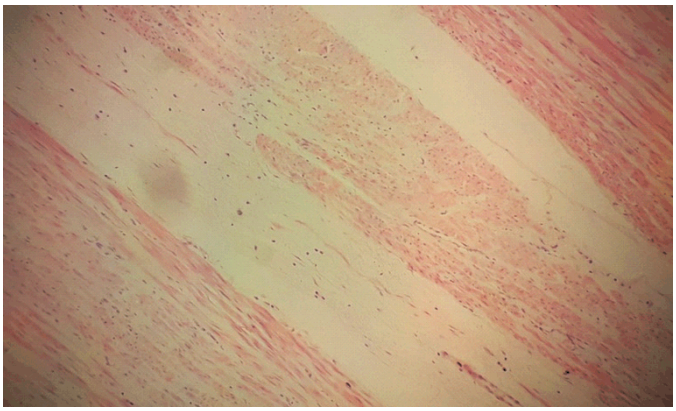

Figure 5: Loose fascicles of smooth muscle cells separated by edematous stroma (H&E x40).

Figure 6: External surface of uterus.

Figure 7: Complete cystic degeneration of uterine leiomyoma.

ischemia from imbalance between oxygen demand by the expanding tumour cells and the available supply [2–4].

Various types of degenerative changes have been described, including hyaline, myxoid, red degeneration and cystic degeneration [5, 9, 10]. Malignant transformation is observed in 0.5% of leiomyomas, and may be a primary or secondary phenomenon [8].

Cystic degeneration of leiomyomas, an extreme form of hydropic change, may simulate other abdominopelvic masses like ovarian tumours [7, 11], endometriomas [12], abscesses [10], adenomyosis [9], and uterine sarcomas.

Hydropic change, resulting from accumulation of oedema fluid in the connective tissue of the tumour, frequently presents in a focal form or more rarely, diffuse and extreme hydropic degeneration may occur, resulting in a very large tumour that may obscure the organ of primary involvement, alter the clinical picture, and thus pose a diagnostic challenge to the radiologist and clinician

[5, 7, 13–15]. This may ultimately result in wrong clinical management or excessive treatment.

While a high index of suspicion is to be held in assessing complex adnexal masses, degenerating fibroids have to be included in the differential diagnosis of such mass lesions in women of child bearing age. More importantly, excised masses must be examined histologically to assign benignity or otherwise and so ensure that appropriate management regimens are instituted for the overall well-being of the patient in question. Also, MRI may be employed when USG scan results are unable to shed light on the nature and exact location of the lesion [7, 16, 17].

CONCLUSION

While a high index of suspicion is to be held in assessing complex adnexal masses, degenerating fibroids have to be included in the differential diagnosis of such mass lesions in women of child bearing age. More importantly, excised masses must be examined histologically to assign benignity or otherwise and so ensure that appropriate management regimens are instituted for the overall well-being of the patient in question. Also, MRI may be employed when USG scan results are unable to shed light on the nature and exact location of the lesion.

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Author Contributions

Ifeyinwa Mary Asuzu – Substantial contributions to conception and design, Acquisition of data, Analysis and interpretation of data, Drafting the article, Revising it critically for important intellectual content, Final approval of the version to be published
Emmanuel Ugwa – Substantial contributions to conception and design, Acquisition of data, Analysis and interpretation of data, Drafting the article, Revising it critically for important intellectual content, Final approval of the version to be published
Kevin Nwabueze Ezike – Substantial contributions to conception and design, Acquisition of data, Analysis and interpretation of data, Drafting the article, Revising it critically for important intellectual content, Final approval of the version to be published

Guarantor of Submission

The corresponding author is the guarantor of submission.

Source of Support

None.

Consent Statement

Written informed consent was obtained from the patient for publication of this case report.

Conflict of Interest
Authors declare no conflict of interest.

Data Availability
All relevant data are within the paper and its Supporting Information files.

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