ORIGINAL RESEARCH PAPER

Obstetrics & Gynaecology

A RARE CASE:OSSEOUS METAPLASIA IN LEIOMYOMA

KEY WORDS: Leiomyoma, Osteoplastic, Metaplasia, Osseous, Postmenopausal

Dr Shivani Khodaskar	Junior Resident, Dept of OBGY, DYPatil hospital, Nerul, Maharastra.
Dr Richa Singh	Head Of Unit, Dept of OBGY, DYPatil hospital, Nerul , Maharastra.
Dr Ankita Shahasane	Assistant Professor, Dept of OBGY, DYPatil hospital, Nerul, Maharastra.
Dr Ayushi Chowdhary	Junior Resident, Dept of OBGY, DY Patil hospital, Nerul, Maharastra.

ABSTRACT

Introduction: One of the most prevalent tumours of the female genital tract during the reproductive years is leiomyoma. It is a benign smooth muscle tumour. Given that leiomyoma uteri are one of the most prevalent tumours of the female genital tract during the reproductive years, it is not surprising that it exhibits a broad range of histological variants. However, frank bone production is even more unusual than heterologous tissue differentiation. There is conjecture regarding the causes of heterologous tissue production in a leiomyoma.The production of pure mature bone in a uterine leiomyoma is an uncommon case report, and it may be one of the first. **Case Report:** In this case, a 56-year-old postmenopausal female patient had an ultrasound that appeared to show a fibroid, but she had no other complaints. **Conclusion:** Osseous metaplasia is a rare clinical condition, despite the large range of histological diversity seen in leiomyomas.

INTRODUCTION

Smooth muscle tumours of the female genital tract rarely occur outside the myometrium. The most frequent uterine tumours in women throughout their reproductive years are leiomyomas.[1]The total frequency is 4-11%, but among women over 50, it practically doubles to 40%.[2] Ossification, also known as osseous metaplasia, refers to the abnormal formation of bone tissue in non-osseous (non-bone) structures. Leiomyomas, also called uterine fibroids, are benign tumours that commonly develop in the smooth muscle layer of the uterus.

While leiomyomas typically consist of smooth muscle cells, they can undergo various types of metaplasia, including osseous metaplasia. Osseous metaplasia in a leiomyoma refers to the process in which bone tissue forms within the tumour. This phenomenon is relatively rare but has been reported in medical literature.

CASE REPORT

A 55-year old postmenopausal female was evaluated for pain. The woman denied having had her uterus surgically altered in the past, and her obstetric history was notable for two spontaneous full-term deliveries.

Patient is a known case of Diabetes mellitus / Hypertension / Hypothyroidism on medication. HbA1c was raised up to 9. Rest all routine haematological and biochemical investigations were within normal limits.

Ultrasound examination revealed a sub mucosal hyper echoic lesion measuring 8.9x8cm in posterior-right lateral wall of uterine cavity with dense calcification suggestive of sub mucosal leiomyoma. Also 1.4x1.2cm and 1.3x1cm mural leiomyoma in left lateral wall.

She underwent total laparoscopic hysterectomy with bilateral salphingophrectomy. Intra-operatively uterus was very hard to cut and remove. (Figure 1)

Grossly, the uterus was 5x3x1 cm in size and had a 2.5x2.5 cm nodule that was submucous, stony, and extremely difficult to cut.

The mass's sliced portion revealed rocky, hard regions that were yellowish on the wall facing the endometrial cavity. (Figure 2)

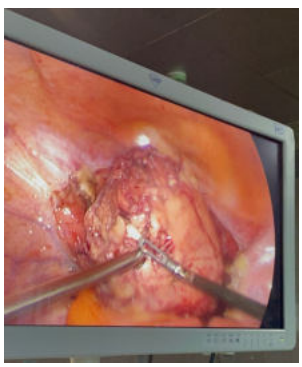

Figure 1: Laparoscopic View

Figure 2: Gross Picture Of Uterus

On H and E stained sections from the uterine tumour shows a tumour composed of interlacing bundles of smooth muscle fibre with dense hyalinization, calcification along with ossification noted (Figure 3). Final Histopathological reported atrophic endometrium, larger subserosal leiomyoma with extensive hyalinization and ossification with small intramural leiomyoma. Bilateral adnexa and cervix show no significant pathology.

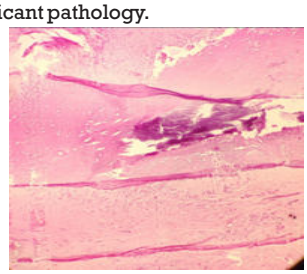

Figure 3: Histopathological Features Of The Mass

DISCUSSION

The majority of uterine smooth muscle tumours, or leiomyomas, are frequent. Its cancerous cousin, leiomyosarcoma, is also the most prevalent non-epithelial malignant tumour in the uterus. Leiomyomas show a variety of histological variations, including atypical, cellular, mitotically active, myxoid, and epithelioid. They can also have peculiar growth patterns.[3,4] Leiomyoma containing heterologous elements is an uncommon variation of leiomyoma that can include heterologous tissues such chondroid and osseous tissues, fat and skeletal muscle, etc. The most frequent heterologous element in leiomyomas, also known as lipoleiomyomas, is adipose tissue.[3,4]

The majority of the reported cases had an earlier history of abortion after the osseous alterations in the leiomyoma.[5] The majority of the patients are in the age range for conception. In the reproductive age group, the period of time between the antecedent abortion and the discovery of ossification ranges from 8 weeks to 14 years.[5] However, Pushpinder Kaur et al.[6], who identified osseous metaplasia in leiomyoma in a 60-year-old post-menopausal female, and Shimazu et al.[7], who described endometrial ossification in a 62-year-old post-menopausal woman, have both characterised rare tumours that are comparable to our case.

Numerous hypotheses have been put forth to explain the pathogenesis of ossification, including hypercalcemia, hypervitaminosis D, hyperphosphotemia, chronic endometritis, pyometra, persistent oestrogen stimulation of the endometrium, osteogenesis in the surrounding endometrium promoted by retained foetal bones, and dystrophic calcification of retained and necrotic tissues.[8]

Mesenchymal cells with the innate ability to metaplasia and the capacity to develop into chondroblasts or osteoblasts are also stimulated to proliferate as a result of chronic endometritis.[8] In order to substantiate the claim that mature endometrial stromal cells can undergo cartilaginous metaplasia in response to persistent inflammation or trauma, Roth and Taylor showed the presence of acid mucopolysaccharides. These patients' biopsy samples of cartilage come from the osteoblastic process.[9] Due to the patient's lack of such symptoms, the indexed instance is similarly unusual.

Shaco-Levy et. al.[11] reported a case displaying complete ossification of the ovary, while Badawy SZ et. al.[10] documented osseous metaplasia within an endometrioma of a supernumerary ovary. However, only microscopic foci of endometriosis were found. Extensive endometriosis has also been linked to heterotopic bone in the ovary.[12] Theoretically, according to these researchers, endometriosis-related continual inflammatory assaults to the tissues caused osseous metaplasia. Campo et al.[13], who found osseous metaplasia in the uterus and ovaries bilaterally in a woman with an intrauterine device, provided more evidence in favour of this explanation of inflammation. Ossification has been linked to ovarian neoplasms in a number of case reports, including one involving a fibroma[19], luteinized thecomas[14,15], Sertoli-Leydig tumours[16], and mucinous cystadenomas.[17,18] In some case reports, calcification rather than ossification has been seen around the ovaries.[20–22] Other solitary cases of ossification without any concomitant anomalies have also been reported. Both Shipton et al.[24] and Rosa e Silva et al.[23] described this phenomenon.

Since infertility is the most frequent presenting symptom in patients with this disorder, which is frequently found in people of reproductive age, hyteroscopic excision of bone chips has successfully restored fertility in certain cases. Additionally, it has been discovered that oestrogen plays a function in promoting osteogenesis. In a patient who had been receiving high doses of calcium and vitamin D for a long period[8], Adomsons&Somners[25] reported a case of ossification in leiomyoma. Our patient has no such history.

However, the occurrence is extremely uncommon and appears to be getting even more so in cases of uterine leiomyoma for unexplained reasons.[26] In order to prevent misdiagnosing this illness as a malignant mixed mullerian tumour of the uterus, it is crucial for the pathologist to understand the non-neoplastic nature of this disorder.[26]

CONCLUSION

The case illustrates how unusual it is for a postmenopausal woman to just have stomach pain when they have a leiomyoma with osseous metaplasia.

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