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Research Article

WOMB STONE- A POSTMENOPAUSAL PEDUNCULATED SUBSEROSAL LEIOMYOMA WITH EXTENSIVE CALCIFICATION

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ABSTRACT

Uterine leiomyomas are the most well known benign tumors of child bearing age group. However these tumors are known to regress after menopause in 70-90% of cases. With time several secondary degenerative changes can develop in a fibroid. Owing to its location calcific degeneration, though uncommon, can pose diagnostic difficulty due to its radiological misinterpretation imparting an impression of a parasitic leiomyoma. We hereby report a rare case of calcified subserosal leiomyoma occuring in a postmenopausal woman. A 50 year old postmenopausal woman presented with complaints of descent of a mass per vaginum and lower abdominal pain. Vaginal hysterectomy without salpingo- oophorectomy was performed. On Histopathological examination a diagnosis of calcified leiomyoma was rendered. With only few cases reported so far, Subserosal leiomyoma of uterus with extensive calcification in a postmenopausal woman is rare entity and its possibility must be considered in the list of differentials of calcified masses of pelvis.

INTRODUCTION

Uterine leiomyomas are the most well known benign tumors of reproductive age group females with an incidence of 20-50%.[1] Being hormonally dependent, 70-90% of these tumors regress after menopause.[2] Histopathologically these tumors exhibit various secondary changes including hyaline degeneration, fatty degeneration, red degeneration, cystic degeneration and calcified degeneration.[3,4] However extensive calcific degeneration forming a bony hard mass in a subserosal leiomyoma, occurring in a postmenopausal female is quite uncommon. On our search of literature only few such case reports have been reported so far.[1,3]

Owing to its rarity and its clinico-radiological resemblance to a bladder calculus, or a calcified tumor of ovary, a definitive diagnosis of this lesion is of utmost importance for proper management of the patient. We report this case with the intention of spreading awareness about such an extensive calcific degeneration so as to avoid its misdiagnosis as bladder calculus or a teratoma with calcifications of ovary.

Case Report

A 50 year old, P_2L_0 postmenopausal woman for the last 5 years, presented to the gynecology outpatient department with complaints of a mass coming out of the vagina since 10 years, and lower abdominal pain for the last 5 months. She had a past obstetric history of both normal vaginal deliveries. There was no history of intake of oral contraceptives or hormone replacement therapy after menopause. General and systemic examinations were within normal limits except that the patient was an obese female. Local examination revealed a third-degree uterovaginal prolapse and on per-vaginum examination although uterus was retroverted, normal in size, a hard palpable mass was felt on the right side of the anterior uterine wall near the fundus. Bilateral fornices were free and there was no tenderness. Both tubes were normal. Bilateral ovaries near the lateral wall were atrophied.

On Ultrasonography there was a solid heterogeneous hypoechoic mass measuring 3cm x 3cm on the right aspect of the uterus. Serum calcium levels, serum phosphate levels, KFT (kidney function tests) and all other hematological, biochemical investigations were within normal limits. So a total vaginal

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hysterectomy without salpingo-oophorectomy along with repair of pelvic floor was performed and specimen was sent for histopathological examination. On gross examination, the uterus measured 7cm x 6cm x 2 cm and on external surface two subserosal pedunculated fibroids were identified; larger measuring 3.5 cm x 3 cm and other measuring 2 cm x 1 cm. (Figure 1) Cervix was elongated, 4 cm in length. The larger fibroid was stony hard while the smaller was firm to hard in consistency.

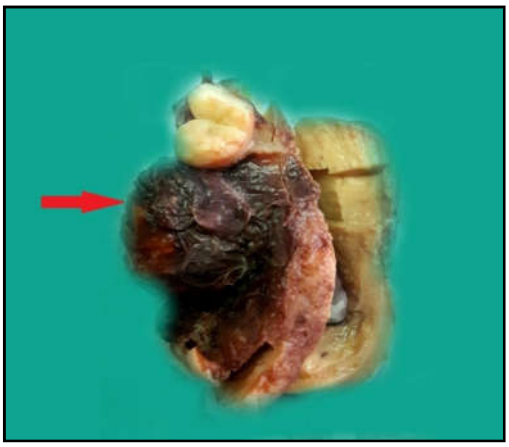

Figure 1 Gross photograph showing two subserosal pedunculated fibroids; larger fibroid was stony hard (red arrow) while the smaller was firm to hard in consistency

On cut section, the larger fibroid was pseudo-encapsulated, solid grey white predominantly calcified mass with some uncalcified grey white areas having an ill-defined whorling pattern in the periphery (Figure 2).

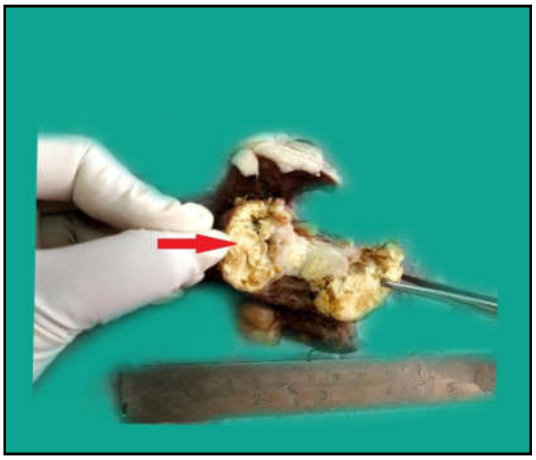

Figure 2 Cut surface of the larger fibroid showing a solid grey white predominantly calcified mass as shown by an arrow.

The smaller fibroid however showed no evidence of calcification and had a well defined whorling pattern on cut section. The sections from larger fibroid were decalcified in a solution containing 50% formic acid and 50% distilled water, for 5 days. On microscopy, sections from larger fibroid showed predominantly large areas of calcification and hyaline degeneration of the tumor tissue obscuring the smooth muscle bundles (Figure 3,4). However few foci in the periphery of the pseudocapsule revealed fascicles and bundles of spindle shaped cells having cigar shaped blunt ended, elongated nuclei and eosinophilic cytoplasm. The smaller fibroid only showed bundles and fascicles of smooth muscle cells and was diagnosed as leiomyoma only. The endometrium was in disordered proliferative phase while the cervix showed the evidence of chronic cervicitis. Based on above findings a final diagnosis of a calcified leiomyoma was made. The patient's post operative course was uneventful. On follow up the patient did not have any complaints 6 months after the surgery.

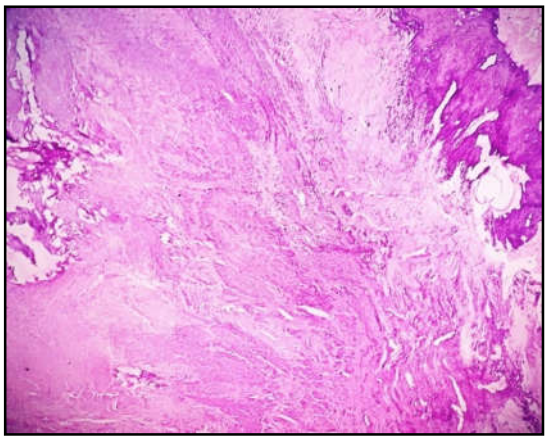

Figure 3 Microphotograph showing bundles and fascicles of smooth muscle cells with deep basophilic granular deposition as shown by an arow. (H and E stain, 4x)

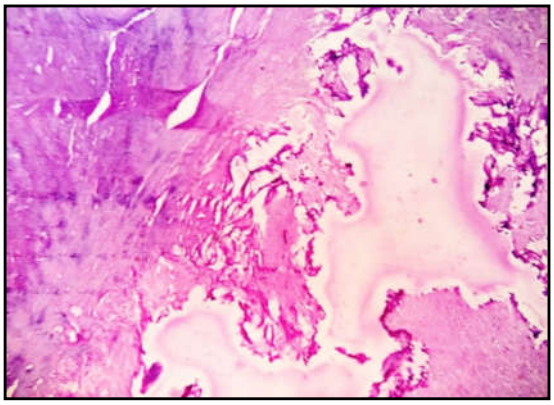

Figure 4 Microphotograph showing areas of calcification. (H and E stain, 10x)

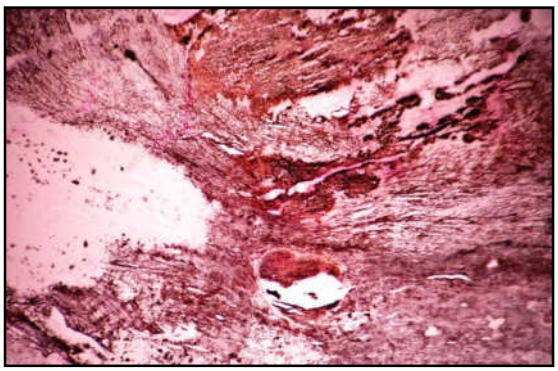

Figure 5 Microphotograph showing brown-black coloured staining depicting calcium deposition within the smooth muscle bundles. (Von Kossa stain, 4x)

DISCUSSION

Leiomyoma is the most frequently diagnosed benign smooth muscle tumor, in routine practice. In most instances they tend to subside after menopause as it has been suggested that their growth is reliant on estrogen.[4,5] Common in the reproductive

age group, being estrogen dependent these tumors generally regress after menopause.

However as proposed by Kawamura *et al*, estrone, insulin- like growth factors, epidermal growth factors might play an important role in invigorating the growth of leiomyomas in postmenopausal women.[6]

An alliance with polypeptide growth factors such as, platelet derived growth factors (PDGF), transforming growth factors (TGF) and vascular endothelial growth factors (EGF) was also put forth in stimulating its growth.[7,8] Over expression of many of these growth factors help in either increasing smooth muscle cell proliferation caused by TGF, FGF-fibroblast growth factors or by DNA synthesis (EGF, PDGF), stimulating extracellular matrix synthesis (TGF-β) or help in promoting mitogenesis (TGF-β, EGF, IGF, Prolactin) and angiogenesis (FGF,VEGF).

In obese postmenopausal women, due to aromatization of fat, estrone is formed by peripheral conversion of adrenal derived androstenedione that helps in stimulating leiomyomas growth.[9]

In our case also, since our patient was obese, we suppose that the higher levels of estrone or growth factors, or both might have played a role in the persistence of leiomyoma in postmenopausal age group. As a result of such persistent stimulus and uncontrolled growth of these tumors, they sometimes outgrow their blood supply and undergo various types of secondary degenerative changes including hyaline degeneration, fatty degeneration, red degeneration, cystic degeneration and calcified degeneration. Most often encountered degeneration is that of the hyaline change accounting for almost 63% of cases while other ensue occasionally; such as myxomatous degeneration (13%), calcified degeneration (8%), mucoid changes (6%), cystic changes (4%), red degeneration (3%) and fatty degeneration (3%).[5]

Though calcified degenerative changes occur more commonly in postmenopausal women as in our case but complete calcification of a leiomyoma forming a bony hard mass is still uncommon.[1,3] Calcium deposition tends to occur at the periphery of leiomyoma. However, in our case whole of the leiomyoma was transformed into a solid calcified mass.

Leiomyomas usually present with menometrorrhagia and pain at the lower abdomen and pelvic region. In our case, patient presented with a mass descending per vaginum and lower abdominal pain.

Fibroids are easily diagnosed on imaging but those with atypical presentation due to secondary changes can cause a diagnostic dilemma especially at postmenopausal age group. They are also known as "womb stones" as they become radio-opaque because of the presence of calcium. Its clinicoradiological resemblance to bladder calculi, calcified fibrous tumor of the ovary and rarely with a calcified dracunculus medinensis (guinea worm) imparting an impression of a parasitic leiomyoma can cause diagnostic uncertainty; therefore a definitive diagnosis is important for timely and proper management of the patient.[4,10] Hysterectomy with or without salpingo-oophorectomy is the treatment of choice in subserosal calcified fibroid in a postmenopausal woman.

Calcified subserosal leiomyoma in postmenopausal women is rare. Sometimes, it may lead to a diagnostic confusion with other calcified adnexal masses or a bladder calculi. The possibility of a calcified leiomyoma must also be kept in mind not only clinically but radiologically as well. Hysterectomy is the definitive management and histopathological examination helps in clinching diagnosis.

Disclosure Statement

The authors have no conflict of interest to declare.

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