

CASE REPORT

Symptomatic Uterine Leiomyoma in a 65-year old Postmenopausal Virgin:
a case report

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ABSTRACT

A case of symptomatic uterine leiomyoma coexisting with cervical intraepithelial neoplasia (CIN) III in a 65-year old postmenopausal virgin is reported. She presented with constipation suggestive of intestinal obstruction with no history of previous surgery, and investigations confirmed a calcified uterine leiomyoma. She had exploratory laparotomy, total abdominal hysterectomy and bilateral salpingo-oophorectomy. Histopathological examination confirmed uterine leiomyoma and concomitant severe cervical intraepithelial neoplasia (CIN III). Symptomatic uterine leiomyoma in an elderly postmenopausal woman is rare, and its coexistence with CIN III in a virgin, is even rarer. Total abdominal hysterectomy with bilateral salpingo-oophorectomy remains the treatment of choice in our environment. This, possibly, is the first reported case in Nigeria.

Keywords: *Cervical, intraepithelial, ischaemia, neoplasia, hysterectomy, salpingo-oophorectomy*

INTRODUCTION

Uterine leiomyomas are one of the most common tumours that are clinically managed in women of reproductive age, with their incidence increasing in women of Afro-Caribbean origin. Although, a few cases of postmenopausal uterine leiomyomas have been reported in the literature, their occurrence with symptoms in the absence of sarcomatous changes in elderly postmenopausal women, probably, have not been reported.^{1,2,3} Identification of these lesions is important so that the patient can be treated appropriately.

Leiomyomas are oestrogen and progesterone-sensitive tumours and, therefore, are said to

shrink after menopause.⁴ However, the spontaneous appearance of a symptomatic calcified uterine leiomyoma, in an elderly postmenopausal woman has not been previously reported in Nigeria. Also, its coexistence with severe dysplasia of the cervix or cervical intraepithelial neoplasia (CIN) III is a rare and inexplicable situation when these occur in a virgin. Here, we report the exceedingly rare case of a symptomatic uterine leiomyoma associated with severe cervical dysplasia in an elderly postmenopausal virgin, as reported by the histopathologist. The definitive treatment she had was total abdominal hysterectomy and bilateral salpingo-oophorectomy.

CASE REPORT

This 65-year old nulliparous lady was referred to the Gynaecology Clinic through the General Out-Patient Department (GOPD) of the teaching hospital. She complained of an abdominal mass of 9 months' duration, with progressively worsening constipation. There was no associated abdominal pain and no other gastrointestinal symptoms. There was gradual reduction in the caliber of faeces until she could no longer pass faeces even with straining. There was no postmenopausal bleeding, contact bleeding, abnormal vaginal discharge, weight loss, anorexia, or urinary symptoms.

She attained menarche at the age of 14 years with regular menstruation subsequently, and had neither had vaginal intercourse, nor Papanicolaou smear in the past. She was not known to have diabetes mellitus or hypertension, and neither smoked cigarettes nor ingested alcohol. There was no previous history of surgery.

Her physical examination revealed an elderly woman in no distress who was afebrile, anicteric and not pale. There was no peripheral lymphadenopathy or pedal oedema. Her height and weight were 161 cm and 63.5 kg, respectively, with a body mass index (BMI) of 24.52 kg/m². Her respiratory rate was 24/minute, pulse rate was 82/minute, regular and with full volume, blood pressure was 130/60 mmHg, and S1 and S2 heart sounds were heard, with no murmurs or gallops. Her jugular venous pressure was not increased.

The abdominal examination revealed a 36-week size pelvic mass that was nodular, firm and mobile and non-tender. The liver, spleen and kidneys were normal, but the vaginal examination revealed atrophic vulva, Grade-1 female genital mutilation and narrow introitus. There was no demonstrable urinary stress incontinence. The digital rectal examination revealed good anal hygiene and good anal sphincteric tone, and the rectum

was packed with hard faeces. The rectal mucosa was free, and the uterine mass was confirmed through the rectum.

Subsequently, following abdomino-plevic ultrasonography, a diagnosis of uterine leiomyoma was made and she was admitted in the Gynaecology Ward. Her blood packed cell volume was 42%, and total white blood cell count was 5.5x10⁹/L and human immunodeficiency virus screening result was non-reactive. Urinalysis, liver function test, electrocardiography and serum electrolytes and creatinine, and blood urea, were all normal. A chest radiograph also showed normal findings.

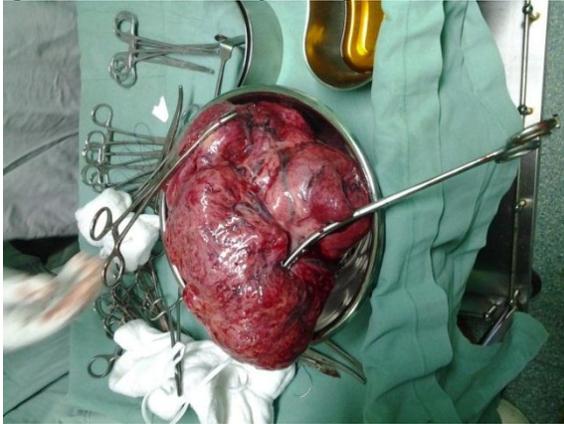
Abdomino-pelvic ultrasonography revealed a bulky non-gravid anteverted uterus with multiple intramural and subserous solid masses (mostly calcified). The largest of the masses measured 5.8x5.5 cm, and the endometrial cavity was displaced upwards and contained moderate amount of echogenic fluid. The ovaries were not visualized and Pouch of Douglas contained no fluid. The kidneys were normal with no evidence of calyceal dilation or hydronephrosis, and the other abdominal organs were normal. An ultrasonographic diagnosis of multiple calcified uterine fibroids was made.

She was counseled for total abdominal hysterectomy with bilateral salpingo-oophorectomy which was performed under general anaesthesia with endotracheal intubation. The intra-operative findings included a bulky fundal subserosal fibroid that measured 15x14 cm, adherent to the omentum with marked vascularization (Figures 1 and 2). Other intramural fibroids were also found, but the fallopian tubes and ovaries appeared healthy. The estimated blood loss was 600 ml. She was transfused with two units of whole blood and had 1 g of intravenous ceftriaxone intra-operatively and her immediate post-operative condition was satisfactory.

Figure 1. Uterine Leiomyoma in the post-menopausal patient, intra-operatively



Figure 2. Uterine leiomyoma specimen



The surgical specimen was preserved in a plastic container containing appropriate volume of 10% formalin with sent to the histopathology laboratory for histologic diagnosis. She, subsequently, received intravenous normal saline, alternated with 5% dextrose water as well as intravenous ceftriaxone and metronidazole, with intramuscular pentazocine for the first 48hours; following which she was placed on oral medications including haematinics, for the following 5days. The urethral catheter was removed 48hours after the surgery and sutures were removed on the 7th post-operative day. She was discharged home on the 8th post-operative day and was scheduled for a follow-up appointment 2weeks, later.

Macroscopically, histopathology report showed a hysterectomy specimen and a large irregular firm mass. The mass was grayish white-to-tan in colour and weighed 2.2kg. It appeared well encapsulated and measured 21cm in its widest dimension, the wet section was grayish colour with whorled appearance and force of calcification. They ranged in size from 1cm to 4.5cm, and were subserosal, intramural and sub mucosal in locations with some of them already undergoing dystrophic calcification. The ovaries measured 2.5cm in diameter each and appeared grossly normal, and the fallopian tubes were 7.5cm each and also, appeared normal.

Microscopically, sections of the uterine biopsy showed a benign mesenchymal neoplasm composed of proliferating mature smooth muscle bundles disposed in whorls and interlacing fascicles, and there were extensive areas of hyaline degeneration. The overall features were those of degenerating uterine leiomyoma. Sections of the cervix showed severe dysplasia (CIN III) and sections of the fallopian tubes and ovaries were normal.

At the 2-week follow-up visit after surgery, the patient had no complaints and she no longer had constipation. Her vital signs were normal, and her abdominal wound had healed by primary intention. She had another appointment for 6weeks after discharge and still had no new complaints.

DISCUSSION

Uterine leiomyomas are benign tumors, present in 20% to 30% of women, with clinical manifestations in women more than 30 years of age.^{5,6} These tumours are composed mainly of smooth muscle cells, containing varying amounts of fibrous connective tissue, and they are rare after menopause. Most leiomyomas are, therefore, expected to regress after menopause.^{1,4,5}

A symptomatic calcified uterine leiomyoma in postmenopausal women is extremely rare; in such cases it is more difficult to predict the clinical symptoms and physical findings. In most leiomyomas reported for a postmenopausal, there would be previous history of myomectomy or refusal of treatment during the premenopausal period. However, in this case, the patient did not have prior surgery and had no prior history of abdominal mass, myoma-related symptoms or refusal of leiomyoma treatment during the premenopausal age.

Uterine leiomyomas are rarely found in postmenopausal women because their growth is thought to be oestrogen dependent.⁵ However, there are a few reported cases of uterine leiomyoma growth in postmenopausal women.^{1,2,3,7} A number of possible mechanisms have been suggested. Kasai, *et al*; and Kawamura, *et al*; have suggested that other oestrogens or growth factors, such as insulin-like growth factors (IGF), and epidermal growth factors (EGF), might play a role in the growth of leiomyomas in postmenopausal women.^{7,8} The role of progesterone is less clear.^{4,5} The number of progesterone receptors is greater in leiomyomas than the surrounding myometrium.^{4,5} Like oestrogen, it has an impact in epidermal growth factor (EGF) receptor content and also suppresses apoptosis.⁴

Similarly, Vollenhoven, *et al*; and Lumsden, *et al*; have suggested that an association of polypeptide growth factors, such as platelet derived growth factors (PDGF), transforming growth factors, granulocyte-macrophage colony-stimulating factor and vascular endothelial growth factors (VEGF), stimulated the growth of uterine leiomyomas.^{9,10} Many of these growth factors are over expressed in uterine leiomyomas and either increase smooth muscle proliferation (TGF - transforming growth factor, FGF - fibroblast growth factors) or DNA synthesis

(EGF, PDGF), stimulate synthesis of extracellular matrix (TGF- β), and promote mitogenesis (TGF- β , EGF, IGF, prolactin) or angiogenesis (FGF, VEGF).^{4,7}

However, in an obese postmenopausal, peripheral conversion of adrenal derived androstenedione to oestrone by aromatization of fat might stimulate the growth of leiomyomas.⁷ In the present case, oestrone or growth factors, or both, may have played a role in the growth of the uterine leiomyoma since the patient had normal body mass index.

As leiomyomas enlarge, they may outgrow their blood supply, resulting in various types of degeneration: hyaline or myxoid degeneration, calcification, cystic degeneration, or red degeneration.^{4,5} In general, hyaline degeneration is the most common (63%) form of degeneration, while the others occur less frequently, such as myxomatous changes (13%), calcification (8%), mucoid changes (6%), cystic degeneration (4%), red degeneration (3%), and fatty changes (3%).^{5,6,7} Our finding of a calcified leiomyoma is more common in postmenopausal women and most of these histopathological findings are unrelated to the clinical symptoms.⁷

Thus, this case was diagnosed as a common leiomyoma that presented with hyaline degeneration and dystrophic calcification. The exposed surface of the specimen consists of benign mesenchymal neoplasm composed of proliferating mature smooth muscle bundles disposed in whorls and interlacing fascicles. There were extensive areas of hyaline degeneration.

In cases with hyaline degeneration, the cut surface of a hyalinized area is smooth and homogeneous and does not show the typical whorl-like pattern. Over time, with a diminishing blood supply and ischaemic tissue necrosis, calcium phosphates and

carbonates are deposited in the leiomyoma. The calcium is deposited in varying amounts when it is deposited in the periphery, resembling a calcified cyst.³

In the case presented, over time, the blood supply within the myoma may have decreased, and the tissue became ischaemic. Calcium is deposited in the peripheral portion of the leiomyoma. As the degenerative changes progress, the leiomyoma may become solidly calcified.

Additionally, as uterine leiomyomas enlarge, they may produce pressure on surrounding structures. Anterior leiomyomas may cause compression of the bladder with resultant urinary frequency or incontinence, whereas intraligamentous lesions may compress the ureter along the pelvic wall, resulting in hydronephrosis or hydroureter.^{1,2,3,5} Similarly, posterior uterine leiomyomas that impinge on the recto-sigmoid may cause constipation, and this probably, may have been responsible for the constipation the patient presented with.

Few reports have been published on the occurrence of cervical cancer in a virgin.^{11,12,13} However, none of these have been reported in the literature within the past five decades. The diagnosis of severe dysplasia was made fortuitously in the surgical specimen. This was really intriguing because a 65-year old postmenopausal woman who has never been sexually active is at essentially very low risk of having a premalignant cervical lesion and may not need a Pap smear test.

Currently, even in patients at regular cervical screening, the age at which screened women are discharged according to the National Health Service Cervical Screening Programme National Coordinating Network (NHSCSP NCN) in England is 64years.¹⁴ In Scotland, however, women are discharged at the earlier age of 59years.¹⁴ In this case, she was already 65years and coincidentally, a virgin, and as

such the question was whether this could be a chance finding or a yet-to-be identified disease process. The ovaries were removed so as to minimize the chances malignant transformation and in any case, at 65years, the ovaries are not thought to still be functional.

CONCLUSION

We have reported a case of symptomatic uterine leiomyoma in a 65-year-old postmenopausal virgin which coexisted with a severe cervical dysplasia. Due to its exceeding rarity, information on possible mechanisms is lacking. Total abdominal hysterectomy with bilateral salpingo-oophorectomy, which is the treatment of choice in our environment, yielded a good outcome.

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