

An Unusual Presentation of a Severely Calcified Parasitic Leiomyoma in a Postmenopausal Woman

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ABSTRACT

We report the case of a calcified parasitic leiomyoma in a 51-year-old postmenopausal woman with lower abdominal discomfort. She had no history of surgery. Workup confirmed a calcified leiomyoma. On laparoscopy, the mass was separate from the uterus and adhered to the bowel and bladder. Histopathological examination confirmed a calcified leiomyoma. A calcified parasitic leiomyoma in a postmenopausal woman is rare. Most prior cases were in persons with a history of a laparoscopic myomectomy. The diagnosis can be made by radiological findings. Laparoscopic excision is the treatment of choice in such cases.

Key Words: Postmenopausal, Parasitic calcified leiomyoma, Laparoscopic excision.

INTRODUCTION

Uterine leiomyomas are one of the most common tumors found in women of reproductive age. Although a few cases of postmenopausal leiomyomas¹⁻³ have been reported in the literature, parasitic leiomyomas, an uncommon type of uterine leiomyoma, have rarely been reported in this age group. Identification of these lesions is important so that the patient can be treated appropriately. Parasitic leiomyomas have been found in the remnants of a previous hysterectomy or myomectomy.^{4,5} However, the spontaneous appearance of a calcified parasitic leiomyoma, after menopause, has not been previously reported. Here, we report the rare case of a calcified leiomyoma that was located separate from the uterus, ie, "parasitic," in a postmenopausal woman. Laparoscopic removal was performed.

CASE REPORT

A 51-year-old postmenopausal single, never sexually active, woman presented with complaints of lower abdominal discomfort and was referred from a local clinic with the suspicion of a leiomyoma. The patient had regular menstruation from menarche (13 years) to menopause (49 years), and never took hormone replacement therapy. There was no history of surgery or medical illness. Her height and weight were 163 cm and 64.5 kg, respectively, with a body mass index (BMI) of 24.27 kg/m².

Clinical examination revealed a 6-cm pelvic mass, palpable on the right side of the uterus near the anterior wall. A kidney, ureter, and bladder x-ray (KUB) (**Figure 1A**) showed a calcified mass in the pelvic cavity suggestive of a leiomyoma. An abdominal pelvic computed tomographic scan (CT) (**Figure 1B**) revealed a 6.8-cm solid mass lesion in the pelvic cavity that was composed of multiple scattered calcifications, located on the right side of the uterus. The mass was diagnosed as a subserosal calcifying leiomyoma at the right aspect of the uterus; the differential diagnosis included a solid fibrotic ovarian tumor. All standard laboratory tests were within normal range including the CA-125, which was 27.1 U/mL.

Based on the clinical and radiological findings, and consultation with the patient, a laparoscopic excision was planned. On laparoscopy, a leiomyoma-like mass that was

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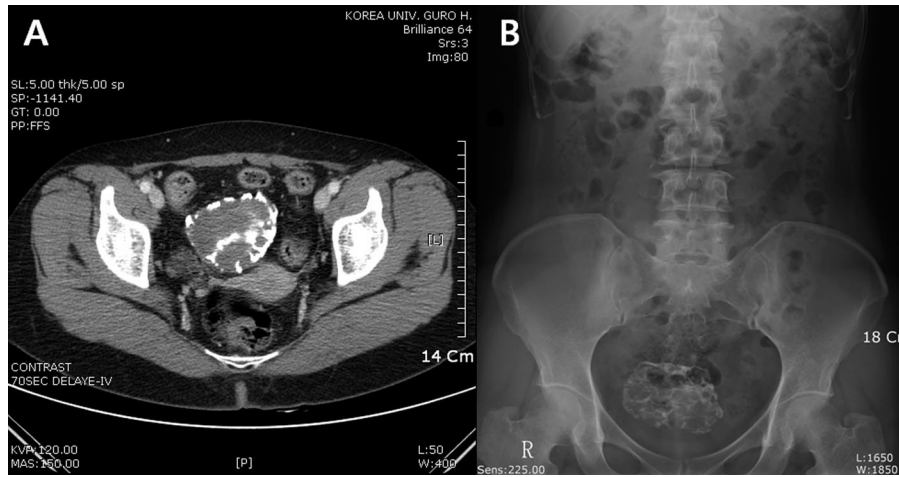


Figure 1. (A) X-ray of the kidney, ureter, and bladder showed a calcified mass in the pelvic cavity. (B) The abdomino-pelvic CT showed a solid mass with multiple scattered calcifications.

adherent to the bladder and bowel mucosa (**Figure 2**) was identified. An adhesiolysis was performed, and any injury to the bowel or bladder wall was avoided. After adhesiolysis, the mass was confirmed to be separate from the uterus. The uterus appeared to be normal in size and shape with intact walls. Both fallopian tubes and ovaries also appeared normal. Laparoscopic examination of the liver, undersurface of the diaphragm, stomach, and intestines did not reveal any abnormality. Using an endobag, we carefully removed the entire mass from the peritoneal cavity. The excised mass weighed 106 grams (**Figure 3**).

On gross examination, the exposed surface of the mass appeared to contain skeletal muscle, adipose tissue, and bony fragments. Multiple sections were submitted for histopathological examination after fixation and decalcifica-

tion. The microscopic examination confirmed the diagnosis of a soft tissue leiomyoma with hyalinization and dystrophic calcification. Three days after the surgery, the patient was discharged from the hospital without any complications. On follow-up, there were no further problems or recurrence noted.

DISCUSSION

Uterine leiomyomas are benign tumors, present in 20% to 30% of women, with clinical manifestations in women more than 35 years of age.^{6,7} These tumors are composed mainly of smooth muscle cells and contain varying amounts of fibrous connective tissue.⁸ Parasitic leiomyomas are rare complications of endoscopic surgery when myoma tissues are removed through a minimal incision

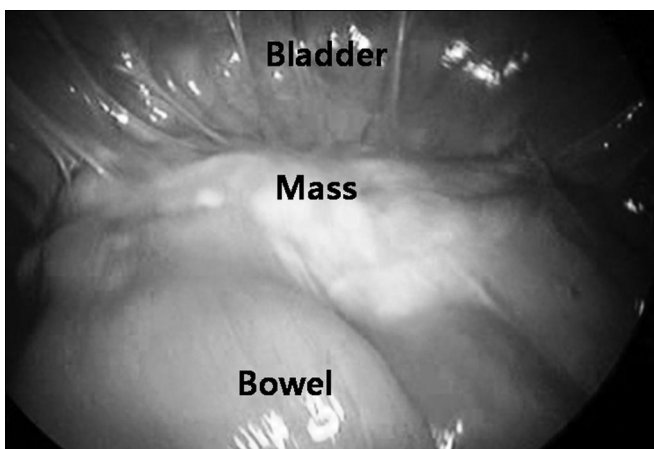


Figure 2. The laparoscopic findings showed a mass that adhered to the bowel and bladder.

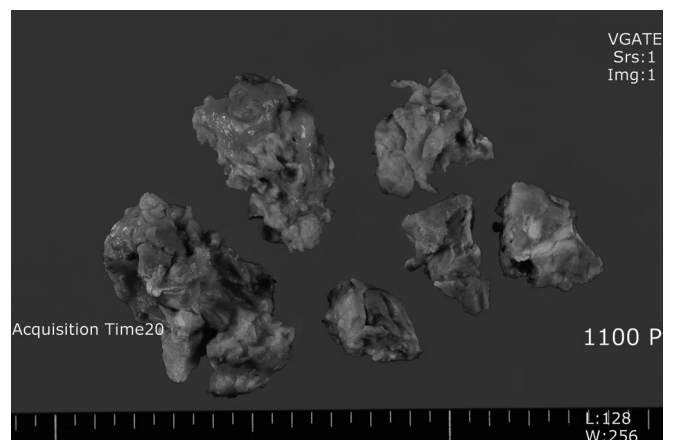


Figure 3. The gross appearance of the mass removed through the umbilical trocar site using the endobag.

after fragmentation. Most leiomyomas regress after menopause. A calcified parasitic leiomyoma in a postmenopausal woman is extremely rare; in such cases it is more difficult to predict the clinical symptoms and physical findings. In most parasitic leiomyomas reported, there was a previous history of a myomectomy and there were multiple lesions; however, in our case the patients did not have prior surgery and had a single leiomyoma. In addition, the patients had no prior reported complaints of myoma-related symptoms.

Leiomyomas are rarely found in postmenopausal women because their growth is thought to be estrogen dependent. However, there are a few reported cases of leiomyoma growth in postmenopausal women.^{3,9} Kawamura et al⁹ suggested that other estrogens or growth factors, such as estrone, insulin-like growth factors (IGF), or epidermal growth factors (EGF), might play a role in the growth of leiomyomas in postmenopausal women. Lumsden et al¹⁰ and Vollenhoven et al¹¹ suggested that an association of polypeptide growth factors, such as platelet derived growth factors (PDGF), transforming growth factors, and vascular endothelial growth factors (VEGF), stimulated the growth of leiomyomas. Many of these growth factors are overexpressed in 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).¹² If a postmenopausal woman is obese, peripheral conversion of adrenal derived androstenedione to estrone by aromatization of fat might stimulate the growth of leiomyomas. In the present case, estrone or growth factors, or both, might have played a role in the growth of the leiomyoma.

Occasionally, pedunculated subserosal leiomyomas can be twisted on the uterine pedicle, and become detached in the peritoneal cavity. Such leiomyomas are referred to as “parasitic leiomyomas”; this tumor survives by revascularization from adjacent structures.⁸ However, sometimes the tumor can adhere to the surrounding structures. The initial pedunculated fibroid likely develops premenopausally, whereas the parasitic leiomyoma may become clinically evident either before or after menopause.¹³ In the present case, on laparoscopic examination, the leiomyoma was found in the anterior pouch of the pelvic cavity, just above the bladder, separate from the uterus. Therefore, it was classified as a parasitic leiomyoma.

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.¹⁴ 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%).¹⁵ The finding of a calcified leiomyoma is more common in postmenopausal woman.¹⁶ Our case was diagnosed as a common leiomyoma that presented with hyaline degeneration and dystrophic calcification. The exposed surface of the specimen consists of many irregular small fragments of soft tissue with skeletal muscle, adipose tissue, and bony fragments. 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 ischemic 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. Other calcified leiomyomas show an irregular or diffuse distribution of calcium.

In our case, the pedunculated leiomyoma might be thought to be coiled on its uterine pedicle. Over time, the blood supply within the myoma might decrease, and the tissue becomes ischemic. Calcium is deposited in the peripheral portion of the leiomyoma. As the degenerative changes progress, the leiomyoma may become solidly calcified. The leiomyoma may separate completely from the uterus and develop an alternative blood supply from another source, such as omentum and adipose tissue.

Few reports have been published on the development of a parasitic leiomyoma^{4,5,17,18} and disseminated peritoneal leiomyomatosis¹⁹ after laparoscopic myomectomy using a morcellator. Paul and Koshy⁴ reported laparoscopic removal of multiple parasitic leiomyomas in a woman who had a previous laparoscopic myomectomy. The leiomyomas were found at the previous port site, the fundus of the uterus and right paracolic gutter. Another case reported by Moon et al⁵ describes a parasitic leiomyoma of the abdominal wall after laparoscopic myomectomy; this patient also had a history of a morcellator used in a prior myomectomy. Another report discussed implantation of retained fragments after the use of morcellation during laparoscopic surgery.¹⁷

Laparoscopic excision is the treatment of choice. The excision retrieval of the leiomyoma was achieved using an endobag instead of a morcellator in our case. The endobag was pushed toward the umbilical port site, and the

mass was removed in fragments by cutting it with a knife. The technique of morcellation was introduced to laparoscopic myomectomy in the mid 1990s; it improved results and reduced blood loss and the complication rate with large leiomyomas.²⁰ However, the risk of incomplete removal and remnants has increased with the use of the morcellator due to the multiple small fragments resulting from the procedure.

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