Fibroid degeneration in a postmenopausal woman presenting as an acute abdomen

Rajesh Shrestha, MD 1, Raju Khanal, MD 2*, Madan Raj Aryal, MD 2, Ranjan Pathak, MD 2, Paras Karmacharya, MD 2, Muniba Naqi, MD 3, Srujitha Murukutla, MD 3, Vijaya Raj Bhatt, MBBS 3 and Aaron Gottesman, MD 3

1Department of Internal Medicine, Memorial Hospital of Rhode Island, Pawtucket, Rhode Island, USA; 2Department of Internal Medicine, Reading Health System, West Reading, PA, USA; 3Department of Internal Medicine, Staten Island University Hospital, New York, NY, USA

Uterine fibroid, one of the most common tumors in women, is estrogen dependent, which commonly regresses after menopause. Fibroid degeneration after menopause, therefore, is rare. Here the authors report a case of 56-year-old postmenopausal woman who presented with acute abdominal pain, low grade fever, and leukocytosis as a result of fibroid degeneration.

Keywords: post-menopause; uterine fibroid; degeneration; acute abdomen

*Correspondence to: Raju Khanal, Department of Internal Medicine, Reading Health System, 6th Avenue and Spruce Street, West Reading, PA 19611, USA, Email: drraju34@gmail.com

Received: 3 September 2014; Revised: 2 November 2014; Accepted: 13 November 2014; Published: 3 February 2015

Uterine fibroid is one of the most common tumors in women of reproductive age (1). The growth of the tumor is estrogen dependent (2); hence, it regresses and becomes clinically insignificant after menopause (1–3). Symptomatic fibroid degeneration after menopause, therefore, is extremely rare (4–6). Here we describe a case of fibroid degeneration in a postmenopausal woman which simulated surgical abdomen.

Case
A 56-year-old postmenopausal woman presented to the emergency department with a 2-day history of intermittent, sharp, severe lower abdomen pain, most prominent over right flank. She complained of nausea but did not have any vomiting. She denied any urinary or bowel complaints as well as vaginal discharge or bleeding. She had history of multiple uterine fibroids in the past. She denied history of smoking, drinking, or any use of illicit drug. She was in a monogamous relationship with her husband.

She did not have any positive past medical or surgical history, family history, or allergy history and was not taking any medication. On examination, she had a blood pressure of 151/86 mmHg, heart rate of 115/min, respiratory rate of 18/min, and temperature of 100.1°F. Abdominal examination revealed normal bowel sounds, firm abdomen, with palpable uterus above umbilicus and tenderness over the right lumbar region without any rebound tenderness. The rest of her physical examination was normal.

Laboratory evaluation revealed white count of 13,500/µL with 88% granulocytes; hemoglobin of 13.6 g/dL; platelet count of 185,000/µL; and normal glucose, electrolytes, amylase, lipase, renal, and liver functions. Urinalysis and chest radiographs were also normal. Computed tomography scan of abdomen and pelvis with oral and intravenous contrast (Fig. 1) showed enlarged uterus measuring up to 14.1 cm × 9.7 cm with irregular and lobular contour, containing multiple uterine fibroids. There was 11.4 cm × 8.2 cm heterogeneous exophytic fibroid with areas of calcifications, non-uniform enhancement with areas of irregular central necrosis, consistent with degenerating fibroid. There was perihypertic ascites as well as fluid in the Morison’s pouch. Appendix was not seen, so appendicitis could not be ruled out. Patient was admitted with a diagnosis of fibroid degeneration. She was given nothing by mouth and started on intravenous normal saline infusion, hydromorphone, and metoclopramide as needed. Patient was also started on intravenous ciprofloxacin and metronidazole for possible acute appendicitis. Approximately 16 hours after patient’s admission, patient started complaining of worsening right upper and lower quadrant abdominal pain and tenderness. Repeat hemogram revealed worsening leukocytosis of 16,800/µL. Serum lactate level was normal. Right upper quadrant sonogram
showed hepatomegaly, hepatic parenchymal echogenicity, and small amount of pericholecystic fluid. Patient was evaluated by gynecologists and surgeons, who attributed the condition to fibroid degeneration. Surgery was offered but the patient decided not to undergo surgery at that time. Next day, her white count further increased to 18,600/µL. The patient, however, felt better and remained hemodynamically stable and afebrile. Her urine and blood culture also turned out to be negative. The subsequent day, her white count dropped down to 17,500/µL. At this point, her antibiotics were discontinued and patient was started on oral diet. Patient was discharged home on oral analgesics on day 5. An outpatient elective hysterectomy was scheduled but cancelled because of upper respiratory tract infection. Three months from discharge, patient continues to do well and has decided against surgery.

Discussion
Uterine fibroid is estrogen dependent (2); hence, it tends to regress and become clinically insignificant after menopause (1–3). There are rare case reports of postmenopausal hyaline (5) or cystic degeneration of fibroid (4, 6). These patients, however, presented with mass effects rather than acute abdomen. As illustrated by this case, degenerative changes can occur in fibroids after menopause and can present as acute abdomen, low grade fever, and leukocytosis, masquerading surgical abdomen.

Hyaline degeneration (63%) is the most common degenerative change in fibroid. Other degenerations include myxomatous changes (13%), calcification (8%), mucoid changes (6%), cystic degeneration (6%), red degeneration (3%), and fatty changes (3%) (7). Degenerative changes are considered to result from excessive growth that outmatches the blood supply, or mechanical compression of the feeder arteries. The increase in the size of fibroid as a result of hyaline or cystic degeneration is presumed to result from accumulation of extracellular matrix (5). Although the precise pathogenesis for degeneration of fibroids in postmenopausal women remains unclear, excessive production of growth factors (epidermal or insulin-like) from the fibroid might explain this condition. Additional studies are needed to shed light on this matter.

Although very rare, uterine leiomyosarcoma may arise from fibroid. Such malignant transformation occurs in middle aged to older women and should be considered in postmenopausal women with rapid enlargement of the fibroid (8). In this patient, an elective hysterectomy was scheduled which was cancelled because of patient preference. However, lack of further symptoms at 3-month follow-up is highly against such a possibility, given the aggressive nature of uterine leiomyosarcoma.

Learning points
1. Fibroid degeneration can occur after menopause.
2. Acute abdominal pain, low grade fever, and leukocytosis can be the presenting feature, thus masquerading surgical acute abdomen.

Conflict of interest and funding
The authors have not received any funding or benefits from industry or elsewhere to conduct this study.

References
1. Gupta S, Jose J, Manyonda I. Clinical presentation of fibroids. Best Pract Res Clin Obstet Gynaecol 2008; 22(4): 615–26.
2. Houston KD, Hunter DS, Hodges LC, Walker CL. Uterine leiomyomas: mechanisms of tumorigenesis. Toxicol Pathol 2001; 29(1): 100–4.
3. Cramer SF, Marchetti C, Freedman J, Padela A. Relationship of myoma cell size and menopausal status in small uterine leiomyomas. Arch Pathol Lab Med 2000; 124(10): 1448–53.
4. Low SC, Chong CL. A case of cystic leiomyoma mimicking an ovarian malignancy. Ann Acad Med Singapore 2004; 33(3): 371–4.
5. Okamoto T, Koshiyama M, Yamamoto K. Rapidly growing leiomyoma in a postmenopausal woman. J Obstet Gynaecol Res 2004; 30(4): 316–18.
6. Yarwood RL, Arroyo E. Cystic degeneration of a uterine leiomyoma masquerading as a postmenopausal ovarian cyst. A case report. J Reprod Med 1999; 44(7): 649–52.
7. Persaud V, Arjoon PD. Uterine leiomyoma. Incidence of degenerative change and a correlation of associated symptoms. Obstet Gynecol 1970; 35(3): 432–6.
8. Yanai H, Wani Y, Notohara K, Takada S, Yoshino T. Uterine leiomyosarcoma arising in leiomyoma: clinicopathological study of four cases and literature review. Pathol Int 2010; 60(7): 506–9.