

# Total Laparoscopic Hysterectomy of an Endocervical Pyomyoma Over Previous Cesarean Section Wound

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## Abstract

A 41-year-old female, G<sub>2</sub>P<sub>2</sub>, who experienced menorrhagia for 1 month, had had a history of myoma uteri for the previous 5 years. The computed tomography showed a leiomyoma mass of approximately 8 cm. She underwent a total laparoscopic hysterectomy with bilateral salpingectomy. This pyomyoma originated in the endocervix over the cesarean section wound. The postoperative care was uneventful. Pyomyoma is a rare condition and is even rarer in premenopausal patients without a history of pregnancy or uterine instrumentation. The spontaneous pyomyoma at the endocervical leiomyoma demonstrated an unusual case in the absence of risk factors. Pyomyoma could be considered as a diagnosis in patients without fever, history of fibroids, and no other identifiable sources of infection.

**Keywords:** Endocervix myoma, laparoscopy, pyomyoma

## INTRODUCTION

Pyomyoma has been reported since 1945 with some fatalities and an association with either pregnancy or postmenopausal patients who have underlying vascular disease.<sup>[1]</sup> Pyomyoma is a suppurative leiomyoma, which is a rare complication resulting from the bacterial colonization of an infarcted or ischemic leiomyoma, but life-threatening. The incidence of pyomyoma has decreased due to the development of antibiotics.<sup>[2]</sup> Pyomyoma occurs most commonly during the premenopausal period, postmenopausal status, pregnancy or the immediate postpartum period, as well as arises after uterine instrumentation, after uterine artery embolization (UAE), or in immunocompromised patients. The mode of infection could be ascending, which the most likely cause of pyomyoma is direct infection of bacteria in a vascular compromise, hematogenous, or lymphatic spread.<sup>[1-7]</sup> As pyomyoma is a rare condition, therefore the diagnosis is difficult. This case presented some uncertain

symptoms and was difficult to identify from the imaging. The definitive diagnosis was only possible with surgery. The patient was diagnosed with endocervical pyomyoma over the previous cesarean section wound, in which this diagnosis was distinguished from previous reports.

## CASE REPORT

A 41-year-old female, G<sub>2</sub>P<sub>2</sub> with the two previous cesarean sections, had been noted with a leiomyoma for 5 years. She had performed hysteroscopic polypectomy in the previous 3 years due to progressive dysmenorrhea and menorrhagia at the Obstetrics and Gynaecology Department of the Chang Gung Memorial Hospital, Taoyuan, Taiwan. She had repeated the second episode of menorrhagia for 1 month, and the pelvic examination showed cervical erosion with leukorrhea, a 14-week size enlargement of the uterus with tenderness. The

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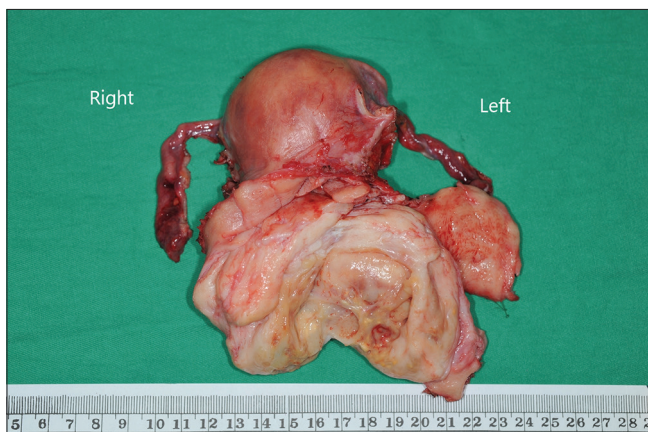
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body mass index was 18.6 kg/m<sup>2</sup>, vital signs were normal, and there was no fever. The hemoglobin levels were 8.7 g/dl, the white blood cell count was 8900/ $\mu$ l, and the CA-125 level was 121 U/ml. The computed tomography (CT) scan showed a large lobulated heterogeneous tumor approximately 8.5 cm  $\times$  6.9 cm  $\times$  6.4 cm with necrotic change at the lower part of the uterus and cervical portion involving the whole layer of the anterior uterine wall. The tumor was anteriorly protruding and closely attached to the superior wall of the urinary bladder. The patient underwent surgery with a total laparoscopic hysterectomy (TLH) and bilateral salpingectomy (BS). After the Veress needle was inserted to establish the pneumoperitoneum, the 10-mm cannula was placed in at the umbilicus. The two 5-mm cannulas were inserted above the anterior superior iliac spine for 2 cm bilaterally. The one 5-mm cannula was inserted above the left lower cannula about 8 cm, parallel to the umbilicus cannula. During laparoscopic surgery, the uterus had a normal surface. The tumor mass was located at the lower segment of the uterus, which was over the previous cesarean section wound [Figure 1]. The removed specimen was dissected that showed the pus was loculated at the endocervical myoma; the 7.5 cm endocervical myoma was located at the previous cesarean section scar. The pus content was extruded from the



**Figure 1:** The gross specimen showed the pyomyoma of the uterine cervix approximately 8 cm

endocervical myoma, and the specimen was sent for frozen section intraoperatively. The frozen section revealed acute and chronic inflammation. The histopathology revealed a degenerative endocervical leiomyoma with inflammation. The postoperative care was uneventful. The patient consent form has been obtained. The study was approved by the Ethics Committee of the Chang Gung Memorial Hospital (Registration Number 20200038444B0).

## DISCUSSION

A pyomyoma patient without infectious symptoms had menorrhagia. As discussed in 1990 by Greenspoon *et al.*, pyomyoma was reported from 1871 to 1945 with 75 cases by Miller, and 11 cases from 1945 to 1988 by Kelly and Cullen. From the unspecific symptoms, it would seem difficult to diagnose pyomyoma; however, the mortality rate is approximately 30%.<sup>[1]</sup> The predisposing factors for pyomyoma have noted a history of uterine leiomyoma, pregnancy, abortion, menopause, UAE, intrauterine device, cervical stenosis, vascular insufficiency (diabetes, hypertension, and atherosclerosis), and systemic disease or infection. Three routes of infection can produce a pyomyoma including direct spreading from the endometrial cavity, the extension of infection from adjacent organs, and hematogenous or lymphatic spreading from occult or apparent infection.<sup>[1-7]</sup> The presented symptoms were fever,<sup>[1,6,7]</sup> amenorrhea,<sup>[2]</sup> abdominal pain,<sup>[3,6]</sup> menometrorrhagia,<sup>[4]</sup> hypermenorrhea with severe dysmenorrhea,<sup>[5]</sup> and palpated abdominal mass.<sup>[7]</sup> This case had experienced menorrhagia for 1 month. Previous reports showed the varied size of the uterine mass between 7 and 50 cm [Table 1]. Greenspoon *et al.* had reported that the patient was dead due to septic shock.<sup>[1]</sup> Myomectomy could preserve fertility in nulliparous women<sup>[3,6]</sup> which Pinton *et al.* showed the patient became pregnant 2 years later after having a myomectomy.<sup>[6]</sup> Obele *et al.* showed that on postprocedure day 14 of the uterine fibroid embolization, the patient had a pyomyoma then a supracervical hysterectomy with BS was conducted.<sup>[4]</sup> The blood culture revealed *Staphylococcus aureus*, *Enterococcus*,

**Table 1: The review of pyomyoma cases**

Author	Review cases (years)	Conditions	Size	Outcome
Greenspoon <i>et al.</i> <sup>[1]</sup>	49, G0	Myomatous uterus	2500 g	Dead
Gupta (1999) <sup>[7]</sup>	75, menopause	Myomatous uterus	30 cm $\times$ 25 cm, 4.3 kg	TAH + BSO
Chen (2010) <sup>[5]</sup>	46, G0	Myomatous uterus	14.3 cm $\times$ 12 cm $\times$ 8 cm	TAH
Iwahashi <i>et al.</i> <sup>[2]</sup>	53, multigravida	Myomatous uterus	50 cm $\times$ 37 cm $\times$ 20 cm, 13.5 kg	TAH + BSO
Obele <i>et al.</i> <sup>[4]</sup>	37, G0	Myomatous uterus	7.3 cm $\times$ 5.2 cm $\times$ 6.9 cm	SCH + BS
Pinton (2016) <sup>[6]</sup>	27, G3P0-0-3-0	Myomatous uterus	17 cm $\times$ 15 cm $\times$ 11 cm	EX-myomectomy
Read and Mullins <sup>[3]</sup>	24, nulliparous	Myomatous uterus	8.1 cm $\times$ 5.5 cm $\times$ 5.6 cm, 128 g	Lap-myomectomy
Present case	41, G <sub>2</sub> P <sub>2</sub>	Endocervical, myomatous uterus	8.5 cm $\times$ 6.9 cm $\times$ 6.4 cm	TLH + BS

TAH: Total abdominal hysterectomy, BSO: Bilateral salpingo-oophorectomy, BS: Bilateral salpingectomy, EX-myomectomy: Explore laparotomy myomectomy, SCH: Supracervical hysterectomy, Lap-myomectomy: Laparoscopic myomectomy, TLH: Translaparoscopic hysterectomy

*Actinomyces meyeri*, and *Escherichia coli*.<sup>[1,2,5,7]</sup> There was a high level of CA 125 in the gynecologic oncology and nongynecologic oncology that the previous report showed 200 U/ml,<sup>2</sup> whereas the level of CA 125 was 121 U/ml in this patient. The CT findings of the uterine leiomyomas showed uterine enlargement and solid density, but the pyomyoma had nonspecific findings.<sup>[8]</sup> The idiopathic pyomyoma mostly occurred in degenerative or necrotic tissue leiomyoma incidentally.<sup>[1-8]</sup> Thus, gynecologists must be aware of the possibility of pyomyoma when presented with an abdominal tumor. Pyomyoma is a life-threatening medical condition that can result in death.<sup>[1]</sup> This case presented menorrhagia with leiomyoma without an obvious source of infection. As the surgery was the only definitive diagnosis and treatment, this patient had a fibroid without pyrexia, which could be difficult to diagnose. Therefore, the diagnosis was an endocervical pyomyoma over the previous cesarean section wound; consequently, the operation was a TLH with BS. In general, the leiomyoma was located at various sites such as subserous, intramural, or submucous myoma.<sup>[9-11]</sup> However, this case is an unusual diagnosis of pyomyoma. The pyomyoma was located at the lower segment of the uterus, which was a different site than previous reports as shown in Table 1. This case can guide the gynecologist to the concern of diagnostic.

### Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient has given her consent for her images and other clinical information to be reported in the journal. The patient understands that her name and initials will not be published and due efforts will be made to conceal her identity, but anonymity cannot be guaranteed.

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### Conflicts of interest

There are no conflicts of interest.

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