Sarem Journal of Medical Research. Volume 11, Issue 2, Summer 2026: 87- 91

A Giant Cervical Subserosal Leiomyoma Presenting as a Pelvic Mass and Menorrhagia: A Case Report

ARTICLE INFO

DOI: 1052547/sjrm.11.2.6

Article Type

Case Report

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Received: 16 July 2026
Accepted: 30 July 2026
e Published: 08 August 2026

Article History

ABSTRACT

Introduction: Cervical leiomyomas are rare benign tumors of the female reproductive tract and account for only a small proportion of all uterine leiomyomas. Giant cervical leiomyomas, because of their large size, deep pelvic location, and close proximity to vital pelvic structures, may present considerable diagnostic and surgical challenges. This report describes the diagnosis and surgical management of a giant cervical subserosal leiomyoma treated at Sarem Women's Hospital in Tehran, Iran.

Case Presentation: A 47-year-old woman presented to Sarem Women's Hospital in Tehran, Iran, with menorrhagia during a routine gynecologic evaluation. Ultrasonography revealed a giant cervical subserosal leiomyoma measuring 143 × 114 × 104 mm located in the posterior wall of the lower cervical canal. In addition, two small intramural leiomyomas were identified in the uterine fundus, along with a low-risk left ovarian cyst (O-RADS II). Given the large size of the tumor, its anatomical location, and the presence of multiple uterine leiomyomas, the patient underwent laparotomy, total abdominal hysterectomy (TAH), bilateral salpingo-oophorectomy (BSO), and adhesiolysis. The procedure was completed without significant intraoperative complications, and the tumor was completely excised.

Conclusion: Although giant cervical subserosal leiomyoma is a rare condition, it should be considered in the differential diagnosis of large pelvic masses and abnormal uterine bleeding. Careful preoperative imaging evaluation and selection of an appropriate surgical approach based on the patient's clinical characteristics are essential for minimizing complications and achieving favorable outcomes. This case highlights the importance of early diagnosis and appropriate surgical management in patients with giant cervical leiomyomas.

Keywords: Cervical leiomyoma; Giant subserosal leiomyoma; Menorrhagia; Pelvic mass; Total abdominal hysterectomy; Case report

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Introduction

Uterine leiomyomas, commonly referred to as uterine fibroids, are the most common benign tumors of the female reproductive tract and arise from the proliferation of smooth muscle cells of the myometrium [1,2]. These tumors occur predominantly during the reproductive years, with a reported prevalence ranging from 20% to 40% across different populations [3,4]. Although many leiomyomas remain asymptomatic, a substantial proportion of patients present with abnormal uterine bleeding, menorrhagia, pelvic pain or pressure, urinary frequency, constipation, infertility, and reduced quality of life, making uterine leiomyomas one of the leading indications for gynecologic consultation and surgical intervention [5].

Uterine leiomyomas are classified according to their location as intramural, submucosal, and subserosal lesions, each of which differs in clinical presentation, potential complications, and therapeutic management [6]. Among these subtypes, subserosal leiomyomas typically grow outward from the uterus and, when they become sufficiently large, may present as a palpable pelvic mass. By exerting pressure on adjacent organs, they may cause symptoms such as pelvic heaviness, chronic pelvic pain, urinary or gastrointestinal dysfunction, and, in some cases, severe uterine bleeding. Tumor size and its relationship to surrounding pelvic structures are important determinants in selecting the most appropriate treatment strategy [7].

Despite the high prevalence of uterine leiomyomas, cervical involvement is exceptionally rare and accounts for only approximately 0.6% of all uterine leiomyomas [8]. Because of their unique anatomical location, cervical leiomyomas may displace the ureters, uterine vessels, and other pelvic structures, thereby creating significant diagnostic and, particularly, surgical challenges. Furthermore, when these tumors enlarge to giant proportions, differentiating them from other pelvic masses, including ovarian tumors, malignant neoplasms, and other cervical lesions, becomes increasingly difficult, and preoperative planning as well as surgical execution require greater clinical expertise and meticulous evaluation [9,10].

Giant cervical leiomyomas represent one of the rarest forms of uterine fibroids and are of particular clinical and educational importance because of the increased risk of intraoperative hemorrhage, ureteral or bladder injury, distortion of pelvic anatomy, and technical difficulty during surgical exposure and resection [10,11]. In such cases, selecting the most appropriate surgical approach and performing meticulous operative management are critical for minimizing complications, ensuring patient safety, and achieving optimal postoperative outcomes. Therefore, reporting rare and successfully managed cases can contribute to the existing body of knowledge and improve clinical decision-making among gynecologic surgeons [12].

In this article, we report the case of a 47-year-old woman with a giant cervical subserosal leiomyoma measuring approximately 14 cm who presented with menorrhagia and a pelvic mass to Sarem Women's Hospital in Tehran, Iran. She underwent laparotomy, total abdominal hysterectomy, bilateral salpingo-oophorectomy, and adhesiolysis. Given the rarity of the tumor location, the considerable tumor size, and the associated diagnostic and surgical challenges, this case report may contribute to a better understanding of the clinical and imaging characteristics of giant cervical leiomyomas, facilitate appropriate therapeutic decision-making, and document a successful experience in the surgical management of this uncommon condition.

Case Presentation

A 47-year-old woman presented to Sarem Super Specialty Hospital in Tehran, Iran, for a routine gynecologic evaluation with a chief complaint of menorrhagia (heavy menstrual bleeding). Initial clinical assessment and physical examination raised suspicion of a pelvic mass, and the patient subsequently underwent further imaging evaluation. Transabdominal and transvaginal ultrasonography demonstrated a uterus measuring 98 × 45 mm (excluding the fibroid) with a heterogeneous myometrial echotexture. The endometrial thickness was 7 mm. The right ovary was normal in size and parenchymal echogenicity, whereas the left ovary contained a 32 × 26 mm cystic lesion that was suggestive of either a small hemorrhagic cyst or an endometrioma and was classified as O-RADS II, indicating a low-risk lesion (Figures 1 and 3).

Further ultrasonographic examination revealed a giant cervical subserosal leiomyoma arising from the posterior wall of the lower cervical canal. The lesion measured 143 × 114 × 104 mm, corresponding to an approximately 14-cm leiomyoma and meeting the criteria for a giant leiomyoma. According to the FIGO classification, the tumor was categorized as FIGO type 6–7, consistent with a predominantly subserosal leiomyoma extending outward from the uterus in close proximity to the cervix. In addition to the main lesion, two small intramural leiomyomas were identified in the uterine fundus, measuring 14 × 12 mm and 18 × 11 mm, respectively, both classified as FIGO type 4. Based on the imaging findings, repeat ultrasonographic evaluation was initially recommended after 6–8 weeks. Clinically, the large cervical leiomyoma could account for symptoms such as pelvic pressure, pain, constipation, urinary frequency, and heavy menstrual bleeding, which was consistent with the patient's presenting complaint of menorrhagia (Figures 2 and 3).

Given the presence of multiple uterine leiomyomas, particularly the giant cervical subserosal leiomyoma,

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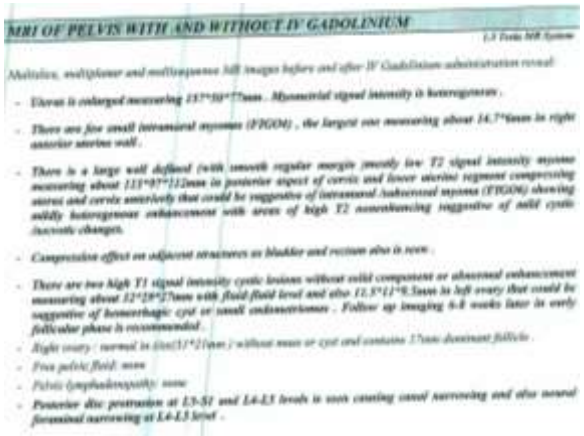
the patient was admitted for surgical management. On December 14, 2025, she underwent surgery performed. Because of the considerable size of the tumor, its anatomical location, and the anticipated surgical complexity, laparotomy was selected as the surgical approach. The procedure included total abdominal hysterectomy (TAH), bilateral salpingo-oophorectomy (BSO), and adhesiolysis. The operation was completed without any reported intraoperative complications, and the cervical mass was completely excised.

The clinical and imaging findings confirmed the diagnosis of a giant cervical subserosal leiomyoma presenting as a pelvic mass and menorrhagia. The rarity of the cervical location, the unusually large tumor size, and the need for laparotomy combined with TAH and BSO make this case a valuable contribution from both diagnostic and therapeutic perspectives and underscore the importance of documenting such uncommon presentations in the form of a case report.



MRI OF PELVIS WITH AND WITHOUT IV GADOLINIUM

1.5 Tesla MR System

Multiplanar, multiphase and multisequence MR images before and after IV Gadolinium administration reveal:

- Uterus is enlarged measuring 15*10*7mm . Myometrial signal intensity is heterogeneous .
- There are five small intramural myomas (FIGO0) , the largest one measuring about 14.7*6mm in right anterior uterine wall .
- There is a large well defined (with smooth regular margin)mostly low T2 signal intensity myoma measuring about 115*87*112mm in posterior aspect of cervix and lower uterine segment compressing uterus and cervix anteriorly that could be suggestive of intramural /subserosal myoma (FIGO6) showing mildly heterogenous enhancement with areas of high T2 nonenhancing suggestive of mild cystic /necrotic changes.
- Compression effect on adjacent structures as bladder and rectum also is seen .
- There are two high T1 signal intensity cystic lesions without solid component or abnormal enhancement measuring about 32*28*27mm with fluid-fluid level and also 12.3*11*9.5mm in left ovary that could be suggestive of hemorrhagic cyst or small endometriomas . Follow up imaging 6-8 weeks later in early follicular phase is recommended .
- Right ovary : normal in size(31*21mm) without mass or cyst and contains 17mm dominant follicle .
- Free pelvic fluid: none
- Pelvic lymphadenopathy: none
- Posterior disc protrusion at L5-S1 and L4-L5 levels is seen causing canal narrowing and also neural foraminal narrowing at L4-L5 level .

Figure 1. Pelvic MRI findings obtained with and without intravenous gadolinium administration.

Figure 2. Transvaginal ultrasonographic images of the uterus and adnexa demonstrating a giant cervical subserosal leiomyoma and multiple intramural leiomyomas.

Figure 3. Transvaginal ultrasonographic images of the uterus and ovaries showing small hemorrhagic cysts/endometriomas in the left ovary and the cervical leiomyomatous mass.

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Discussion

Giant cervical leiomyomas are among the rarest presentations of uterine leiomyomas and are of particular clinical importance because of their unique anatomical location within the cervix, large tumor size, and potential to cause significant distortion of the pelvic anatomy [13,14]. These lesions may present with abnormal uterine bleeding, menorrhagia, pelvic mass, pelvic pain, and compressive symptoms involving adjacent organs. In addition, surgical management is often challenging because of displacement of the ureters, uterine vessels, bladder, and other surrounding pelvic structures [15]. Therefore, reporting rare cases of giant cervical leiomyomas and documenting their diagnostic workup, therapeutic decision-making, and surgical outcomes can contribute substantially to the existing literature, improve preoperative planning, and reduce surgical complications in similar patients.

In the present case, a 47-year-old woman presented with menorrhagia during a routine gynecologic evaluation at Sarem Women's Hospital in Tehran, Iran. Ultrasonographic examination revealed a giant cervical subserosal leiomyoma measuring 143×114×104 mm arising from the posterior wall of the lower cervical canal and classified as FIGO type 6–7. Two additional small intramural leiomyomas were identified in the uterine fundus, along with a low-risk left ovarian cyst (O-RADS II). Given the considerable tumor size, its anatomical location, and the presence of multiple leiomyomas, the patient underwent laparotomy, total abdominal hysterectomy (TAH), bilateral salpingo-oophorectomy (BSO), and adhesiolysis, with complete excision of the tumor. This case represents a giant cervical leiomyoma with relatively limited clinical symptoms but remarkable imaging and surgical findings, underscoring the importance of careful preoperative evaluation and appropriate surgical planning.

Thanasas et al. reported a case of giant cervical leiomyoma in 2025 that was associated with bilateral ureterohydronephrosis and retroperitoneal urinoma, and the patient was ultimately treated with total abdominal hysterectomy and bilateral salpingo-oophorectomy (TAH+BSO) [16]. Their findings are consistent with the present case regarding the presence of a giant cervical leiomyoma and the selection of definitive surgical management. However, unlike the case reported by Thanasas et al. [16], our patient presented primarily with menorrhagia and a pelvic mass, without evidence of ureterohydronephrosis or severe urinary tract complications. This difference may be explained by the direction of tumor growth, the degree of compression exerted on the ureters and bladder, and the timing of diagnosis and surgical intervention before the development of advanced urological complications.

Acosta et al. evaluated the surgical management of an unusually large uterine leiomyoma with cervical dilatation in a reproductive-age woman in 2026 [17]. In their report, a 38-year-old patient with a mass measuring approximately 14×10.1×7.1 cm and abnormal uterine bleeding underwent open abdominal myomectomy, resulting in successful uterine preservation. Their findings are comparable to the present case in terms of large tumor size, abnormal uterine bleeding, and the importance of meticulous preoperative planning. However, fertility preservation was the primary therapeutic goal in the study by Acosta et al. [17], whereas in our patient, given her age of 47 years, the presence of a giant cervical subserosal leiomyoma, and multiple uterine fibroids, TAH+BSO was selected as definitive treatment. This difference was likely attributable to differences in patient age, reproductive status, and the extent of uterine involvement.

Chen et al. (2025) described a giant cervical leiomyoma in a 42-year-old woman and emphasized that very large cervical leiomyomas are extremely rare and pose a high risk of intraoperative hemorrhage and injury to adjacent pelvic structures because of the deep pelvic location of the cervix and its proximity to vital organs [18]. Their findings closely parallel the present case with regard to the rarity of giant cervical leiomyoma, the complexity of surgical management, and the importance of comprehensive preoperative assessment. However, the tumor reported by Chen et al. [18] measured more than 20 cm, resulting in more pronounced surgical challenges related to extensive distortion of pelvic anatomy. In contrast, the tumor in our patient measured approximately 14 cm, and despite undergoing TAH+BSO, no significant intraoperative complications were reported. This difference was likely related to the smaller tumor size, less severe anatomical distortion, and earlier surgical intervention before extensive disease progression.

Published studies consistently indicate that giant cervical leiomyomas represent one of the rarest forms of uterine fibroids and account for only a very small proportion of all uterine leiomyomas. Most reported cases have presented with abnormal uterine bleeding, menorrhagia, pelvic mass, pelvic pain, constipation, urinary retention, and in some cases hydroureteronephrosis secondary to ureteral compression. Because of the deep pelvic location of the cervix and its close relationship to the bladder, ureters, and pelvic vessels, large cervical leiomyomas may cause significant anatomical distortion and increase the risk of severe intraoperative bleeding and injury to adjacent structures. Accordingly, most studies emphasize the importance of accurate preoperative diagnosis, appropriate imaging evaluation, and selection of a surgical strategy tailored to the patient's age, tumor size, and reproductive goals.

Conclusion

Giant cervical subserosal leiomyoma is a rare presentation of uterine leiomyoma that may pose significant diagnostic and therapeutic challenges because of its unique anatomical location and large tumor size. The present case demonstrates that this condition may present with relatively limited symptoms, such as menorrhagia and a pelvic mass, while still requiring meticulous preoperative evaluation and appropriate surgical intervention. Comprehensive imaging assessment and selection of a surgical approach based on the patient's age, tumor size, and reproductive status play a crucial role in minimizing complications and achieving favorable clinical outcomes. Reporting such rare cases can enhance clinicians' awareness of the diverse presentations of giant cervical leiomyomas and contribute to improved decision-making in the management of similar patients.

Ethical Issue

In conducting this research, all ethical principles in medical and biological research were observed in accordance with the Declaration of Helsinki, and the

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rights, dignity, and confidentiality of the participants were protected.

Conflict of Interests
There was no conflict of interest in this study.

Source of Funding
The costs of this project were funded by the Sarem Gynecology, Obstetrics and Infertility Research Center.

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