ARTIKEL PENELITIAN

Jurnal Kesehatan Reproduksi
Vol 11 No 2 – August 2024
ISSN 2302-036X (print), ISSN 2621-461X (online)
Tersedia online di https://jurnal.ugm.ac.id/jkr
DOI: 10.22146/jkr.104275

Extirpation of a Pedunculated Submucouse Leiomyoma: Case Report

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Submisi: 29 Januari 2025; Revisi: 01 Desember 2025; Penerimaan: 01 Desember 2025

ABSTRACT

Background: Uterine leiomyomas are non-malignant neoplasms originating from endometrial tissue. They represent the most prevalent tumor seen in females of reproductive stages. Abnormal uterine bleeding is one of the most common symptoms of leiomyoma. There are several types of myoma, including pedunculated submucous uterine leiomyoma.
Objective: To report the case of a pedunculated submucouse leiomyoma extirpation.
Method: A 38-year-old woman with complaints of abnormal bleeding without pain. Physical examination showed good general condition. Anemic conjunctiva was found. A gynecological examination found a mass in the external uterine ostium as big as a big toe. Ultrasonography examination showed a mass in the vagina that was stalked towards the uterine cavity. The diagnosis was pedunculated submucous uterine leiomyoma. Leiomyoma extirpation therapy was performed.
Results and Discussion: Leiomyomas of the uterus, even when large or numerous, may be asymptomatic. Common signs and symptoms include abnormal bleeding, urinary frequency due to compression of the bladder, sudden pain from infarction of a large or pedunculated tumor, and impaired fertility. The management of pedunculated uterine leiomyoma if the tumor is small is sufficient to do extirpation but if the tumor is large with a thick stalk, laparotomy must be performed.
Conclusion: Extirpation is a surgical intervention prefered therapy for prolapsed pedunculated submucous leiomyoma. It has been seen that small nascent myomas that protrude through the ostium uterine internum can be effectively removed just using extirpation.

Keywords: Pedunculated submucous uterine leiomyoma, extirpation, abnormal uterine bleeding

ABSTRAK

Latar Belakang: Leiomioma uterus merupakan neoplasma non-ganas yang berasal dari jaringan endometrium. Leiomioma merupakan tumor yang paling umum ditemukan pada wanita usia reproduksi. Perdarahan uterus abnormal merupakan salah satu gejala leiomioma yang paling umum. Ada beberapa jenis mioma, salah satunya adalah leiomioma uterus submukosa bertangkai.
Tujuan: Untuk melaporkan kasus ekstirpasi leiomyoma submukosa bertangkai.
Metode: Seorang wanita usia 38 tahun dengan keluhan perdarahan yang tidak normal tidaak disertai nyeri. Pemeriksaan fisik keadaan umum baik dan kesadaran composmentis. Ditemukan mata conjungtiva anemis. Pemeriksaan ginekologi teraba massa di ostium uteri eksternum sebesar jempol kaki. Pemeriksaan ultrasonografi tampak massa di vagina yang bertangkai kearah cavum uteri. Diagnosis adalah pedunculated submucous uterine leiomioma. Dilakukan terapi ekstirpasi leiomioma.
Hasil dan Pembahasan: Leiomioma uterus, meskipun besar atau banyak, bisa saja tidak bergejala. Tanda dan gejala yang umum terjadi adalah perdarahan abnormal, sering buang air kecil karena kompresi kandung kemih, nyeri tiba-tiba akibat infark tumor besar atau bertangkai, dan gangguan kesuburan. Penatalaksanaan leiomioma uterus bertangkai jika tumornya kecil cukup dengan ekstirpasi, tetapi jika tumornya besar dengan tangkai yang tebal, harus dilakukan laparotomi.
Kesimpulan: Ekstirpasi merupakan salah satu terapi intervensi bedah yang dipilih untuk leiomioma submukosa bertangkai yang prolaps. Telah terlihat bahwa mioma submukosa yang menonjol melalui ostium intenum uterus dapat diangkat secara efektif hanya dengan ekstirpasi.

Kata kunci: leiomioma uterus submukosa bertangkai, ekstirpasi, perdarahan uterus abnormal

INTRODUCTION

Uterine leiomyomas are benign neoplasms originating from the smooth muscle of the myometrium and are the most common gynecological tumors in women of reproductive age, with prevalence varying between 5% and 77% depending on age and hormonal factors that contribute to their growth [1]. Although most cases are asymptomatic, leiomyomas can cause symptoms such as abnormal uterine bleeding, pelvic pain, and infertility[2]. Based on their location, leiomyomas are classified as intramural, subserosal, and submucosal. Of the three, pedunculated submucous leiomyoma is relatively rare, accounting for only about 5% of all leiomyoma cases, but it often causes symptoms of heavy bleeding and anemia[3].

The uniqueness of pedunculated submucous leiomyoma lies in its growth, which protrudes into the uterine cavity and can prolapse into the vagina, causing a clinical picture resembling a cervical polyp or even malignancy[4]. Accurate diagnosis requires an ultrasound examination to confirm the presence of a homogeneous, hypochondrium-like mass with a stalk connecting to the uterine wall [5]. The choice of therapy depends on the size of the tumor and the patient's general condition. Generally, hysterectomy or laparotomy is the primary treatment option if the tumor is large or the stalk is thick[6] .

In this report, a 38-year-old woman with a prolapsed pedunculated submucous leiomyoma was successfully treated effectively using simple transvaginal extirpation without complications or conversion to laparotomy, despite the patient presenting with severe anemia due to bleeding. The success of this minimally invasive procedure demonstrates that extirpation can be a safe and effective option for prolapsed pedunculated submucous leiomyoma, especially in facilities with limited resources. This case provides novelty in highlighting the success of conservative management with a minimally invasive approach in a case typically managed through major surgical procedures.

METHOD

This study presents a case report of a 38-year-old woman admitted to the emergency department with abnormal vaginal bleeding without pain. The patient had a previous history of myomectomy three years earlier, which raised a suspicion of recurrent uterine leiomyoma or a possible cervical polypoid lesion.

The diagnostic novelty of this case lies in the ultrasonographic finding that revealed a well-defined, homogeneous mass within the vaginal canal, attached to the uterine cavity by a distinct pedunculated stalk, indicating a diagnosis of prolapsed pedunculated submucous leiomyoma. Such a presentation is rare, as submucous leiomyomas typically remain confined to the uterine cavity and seldom prolapse spontaneously through the cervical canal. The diagnosis was confirmed through a combination of gynaecological examination and transvaginal ultrasonography, without requiring hysteroscopy or MRI, which are commonly used for complex leiomyoma cases. This emphasizes the diagnostic effectiveness of simple ultrasonography in identifying this uncommon condition.

From the management perspective, this case also highlights a unique approach. The patient underwent direct transvaginal extirpation of the prolapsed mass measuring approximately 5 × 3 cm, after stabilizing her anaemic condition with blood transfusion. Conventionally, such cases—especially with larger tumours or thick stalks—are managed through laparotomy or hysterectomy due to the risk of uncontrolled bleeding. However, in this case, a minimally invasive transvaginal procedure was successfully performed without complications, and the patient was discharged two days postoperatively in stable condition.

This case demonstrates that transvaginal extirpation can be a safe and effective alternative for selected cases of prolapsed pedunculated submucous leiomyoma, even for medium-sized tumours. It also reinforces the importance of individualized clinical assessment before opting for major surgical intervention.

The blood test result is 5.4 mg/dL. Another diagnostic test Ultrasonography (USG shows a large, round, homogeneous, relatively hypoechoic mass, measuring 3.4 × 3.5 cm in the vagina with a stalk attached to the uterine wall (Figure 1). Based on the examination, the diagnosis was pedunculated submucous uterine leiomyoma. The operative surgery is chosen with extirpation and curettage after the general condition is stable. The patient was planned to have a blood transfusion

first, then a myomectomy was performed by extirpation through the vagina. Then a speculum inspection was performed before the operation began. A mass the size of a chicken egg measuring 3 x 3 cm was seen in the vagina that had a stalk coming out through the internal uterine ostium into the vagina from the endometrium of the uterine cavity. Then an extirpation and curettage as a surgical therapy was chosen to be performed with a preoperative diagnosis of pedunculated submucosa leiomyoma after the general condition is stable (figure 2). After the mass was successfully extirpated, a mass measuring 5 x 3 cm was obtained (Figure 3), then the tissue was examined for histology. The tissue section shows the endometrium consists of a layer of columnar epithelium and an underlying layer of swollen stromal connective tissue, Among which glands are also lined by columnar epithelial cells. The presence of a tumor mass consisting of oval cell proliferation, densely woven, with hyaline degeneration. No malignant signs. The patient was stable and discharged two days after the surgery.

Figure 1. Uterine (U) Submucosal leiomyoma (SL) and pedunculated stalk (arrow) on the sonography scan

Figure 2. Operative management extirpation

Figure 3. The intraoperative finding showed a pedunculated submucosal leiomyoma 5 x 3 cm was obtained.

RESULT AND DISCUSSION

Uterine leiomyomas, also known as myomas or fibroids, are prevalent non-malignant neoplasms composed of monoclonal smooth muscle cells that mainly develop in the uterine tissue of individuals. Several factors characterize the etiology of this condition, and its occurrence varies between 5% and 77% among women of reproductive age and increases with age[7].

Uterine leiomyomas may be present without causing symptoms, even when they are large or numerous. When symptoms do occur, they often include abnormal uterine bleeding, increased urinary frequency due to pressure on the bladder, acute pain

from the infarction of a large or pedunculated fibroid, and reduced fertility. During pregnancy, fibroids are associated with an increased risk of miscarriage, abnormal fetal positioning, weak uterine contractions during labor, and excessive bleeding after delivery. Malignant transformation into leiomyosarcoma is exceedingly rare[8] .

The tumors themselves are relatively avascular, the main blood vessels being distributed in their capsules. Occasionally, a tumour has numerous blood or lymph vessels, with large cavernous spaces throughout its substance; it is then called a telangiectatic or a lymphangiectatic leiomyoma. Leiomyomas are well-defined, round, firm, gray-white masses that can range in size from tiny, barely detectable nodules to tumors that occupy much of the pelvis. They are almost always located within the myometrium of the uterine body and rarely appear in the uterine ligaments, lower uterine segment, or cervix. Leiomyomas may develop within the muscle wall itself (intramural), just beneath the endometrium (submucosal), or under the outer uterine surface (subserosal)[3] .

The exact cause of leiomyomas in adolescents and adults is unclear. However, it is well established that they grow under the influence of estrogen and progesterone. Their prevalence increases during the reproductive years and significantly decreases after menopause. Compared with normal myometrium, fibroids have higher levels of estrogen and progesterone receptors, as well as aromatase. Several factors can affect fibroid development and growth, including early onset of menstruation, age, menopausal status, exposure to external estrogen, obesity, diet, smoking, oral contraceptive use, and pregnancy[9,10].

According to their position within the uterine wall leiomyomas can be classified as a) intramural (70%), b) growing into the uterine cavity (10%) having either submucosal, pedunculated submucosal or pedunculated vaginal position, or c) growing outwards from the uterus (20%), according to their relationship to the peritoneal coat and to the endometrium. Their site is determined by the position of their origin and by the direction in which they grow; an interstitial leiomyoma can, by development, become submucous or subperitoneal. Subserous and submucous leiomyomas often become pedunculated and give more symptoms: menorrhagia; pain due to prolapse process, to red degeneration, or when the stalk of the pedunculated type is twisted; intermenstrual bleeding; and hydrorrhea[3,11,12].

Ultrasonography (USG) is the preferred initial imaging method for suspected fibroids because it is highly sensitive and specific. On ultrasound, leiomyomas typically appear as well-circumscribed, solid, round masses that are hypoechoic and produce varying degrees of acoustic shadowing. However, their echogenicity can differ depending on the extent of calcification or fibrous tissue, and they may appear hyperechoic or isoechoic. Calcified areas appear as bright foci with shadowing. In some cases, leiomyomas contain anechoic regions due to ongoing necrosis. When fibroids are small and have echogenicity similar to the surrounding myometrium, ultrasound may only detect a slight outward distortion of the uterine contour[5,11]

Not all uterine myomas require surgery, 55% of all uterine myomas do not require any form of treatment, especially small myomas that do not cause any problems or complaints. Myomas require observation every 3-6 months.12 The surgical treatment myomectomy, is the removal of the myoma nest only without removing the uterus. This action can be done for example on submucous myoma in myoma geburt by extirpation through the vagina. Hysterectomy is the removal of the uterus, which is generally the chosen action based on the patient's condition[6,13].

Vaginal myomectomy or hysteroscopy is considered the gold standard for managing cervicovaginal fibroids. The most appropriate surgical method is selected based on the specific features of the fibroid and the patient’s individual needs, which helps guide clinical decision-making. Key considerations include the size and position of the cervicovaginal myoma, the need to preserve hymenal integrity, and whether the patient is pregnant[4].

In this case, the patient experienced painless abnormal bleeding and was found to have a pedunculated mass at the uterine of protruding into the vagina. Ultrasonography revealed a homogeneous mass with a pedunculated mass extending toward the uterine cavity, confirming the diagnosis of a prolapsed pedunculated submucous leiomyoma. Management was performed with transvaginal extirpation, after the patient's general condition was stabilized with blood transfusion.

These findings align with a study by Hidayah et

al. (2023) that reported the success of a conservative approach, transvaginal myomectomy, in cases of prolapsed pedunculated submucous leiomyoma, without significant complications and with a shorter length of stay compared to laparotomy. This study emphasized that the choice of a minimally invasive approach is highly dependent on the size of the mass and the thickness of the pedunculated mass, as well as the availability of facilities and the skill of the operator[6].

The same approach proved effective in this case, demonstrating that with good hemodynamic preparation, a simple procedure such as extirpation can replace a major procedure like hysterectomy in patients who still desire uterine preservation. Furthermore, these results are consistent with the report by Moufawad et al. (2023), a systematic review of 138 cases of cervicovaginal fibroids, found that the choice of surgical technique should consider the patient's size, location, and fertility needs. Transvaginal procedures are recommended for masses measuring <5 cm and with a thin stalk, as they are safer, minimize blood loss, and expedite postoperative recovery[4].

Regarding etiology, histopathology in this case demonstrated smooth muscle cell proliferation without signs of malignancy, consistent with the theory that leiomyomas are monoclonal tumours stimulated by oestrogen and progesterone. This is in line with the review by Flake et al. (2003) which explains the increase in oestrogen and progesterone receptors and higher aromatase activity in leiomyoma tissue compared to normal myometrium[10].

CONCLUSION

Extirpation is one of the surgical interventions preferred therapy for prolapsed pedunculated submucous leiomyoma. It has been seen that small nascent myomas that protrude through the ostium uterine internal can be effectively removed just using extirpation.

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