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Case Report

# Leiomyoma of the vesicovaginal septum: A case report

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**Abstract.** Vaginal leiomyomas are very rare solid tumors of unknown exact etiology. These tumors are generally asymptomatic. Its can lead to preoperative misdiagnosis. The diagnosis of this tumors can only made by histopathology. The treatment of choice is surgical excision. Local recurrence and transformation into sarcoma are rare. In this article, we have reported a 39-year-old woman with an approximately 3x4 cm regular homogenous solid mass reaching to the hymenal ring in the area of the anterior wall of vesicovaginal septum.

Key words: Vaginal leiomyoma, vaginal mass, vaginal surgical excision

## 1. Introduction

Vaginal leiomyoma is an extremely rare benign smooth muscle tumor which is seen in women between the ages of 35-50 years and the exact etiology is unknown (1,2). It was first reported by Denys de Leyden in 1733 (3). Although rare, the vaginal leiomyomas are the most common mesenchymal tumors of the adult vagina (1,2). These tumors can show variable clinical symptoms such as vaginal bleeding, dyspareunia, protrusion of mass from vagina, constipation, difficulty in micturation or abdominal pain, but are usually asymptomatic in the early stages (1-4).

Vaginal leiomyomas are more frequently seen in the midline anterior vaginal wall and are usually under 6 cm in size (1,2). Treatment is usually complete surgical excision via transvaginal route (1,2,4) and the recurrence rate after removal is very low (1,2).

Careful histological examination is necessary for the diagnosis, especially for the exclusion of malignancy (1,2,5). In this report, we aimed to report an unusual case of vaginal leiomyoma.

## 2. Case report

A 39 year old woman gravida 2, para 2 applied to our outpatient clinic with a complaint of dyspareunia. Her previous menstrual cycles were regular and her last menstrual period was 13 days ago. There was no history of oral contraceptive use. Her past medical history and physical examination was not remarkable. Her vital signs were also stable. A solid homogenous mass on the anterior vaginal wall measuring about 3x4 cm and reaching the hymenal ring was showed by the gynecologic speculum examination. When the upper limit of the mass had reached with finger examination, we noticed that the mass was not related to the cervix or any part of the bladder wall. On transvaginal ultrasonography examination, it was shown that the patient had a large hypoechoic mass within the vagina. In addition, the endometrial thickness was 8 mm and there was not any pathological finding in the uterus. All routine preoperative laboratory studies were normal. Preoperatively, because of existing of the risk of urethral injury, a urethral catheter was placed. Then, a midline vertical incision was made over the vaginal mass (Fig. 1a), with a transvaginal approach. it was enucleated from the paravaginal tissues by sharp and blunt dissection. Enucleation of the mass performed slowly to avoid damage to the urethra and the mass was completely removed. Per-operatively, it was also seen that the mass was a primary vaginal tumor.

This study was presented as poster in Palandöken Gynecologic and Obstetrics Congress at 3-7 March 2010 at Erzurum.

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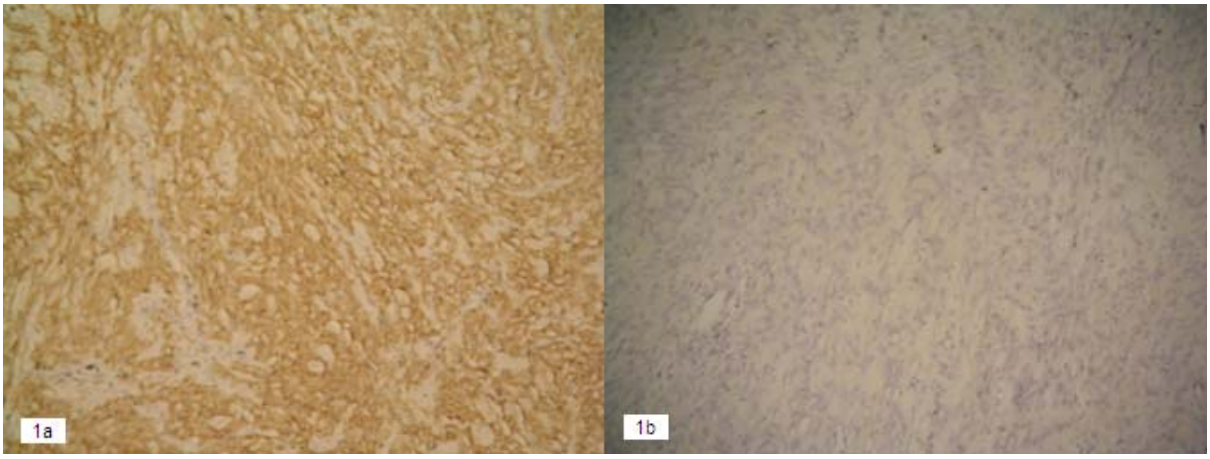


Fig. 1 a). The appearance of midline vertical incision which was made over the vaginal mass. b). The macroscopic appearance of extracted tumor tissue.

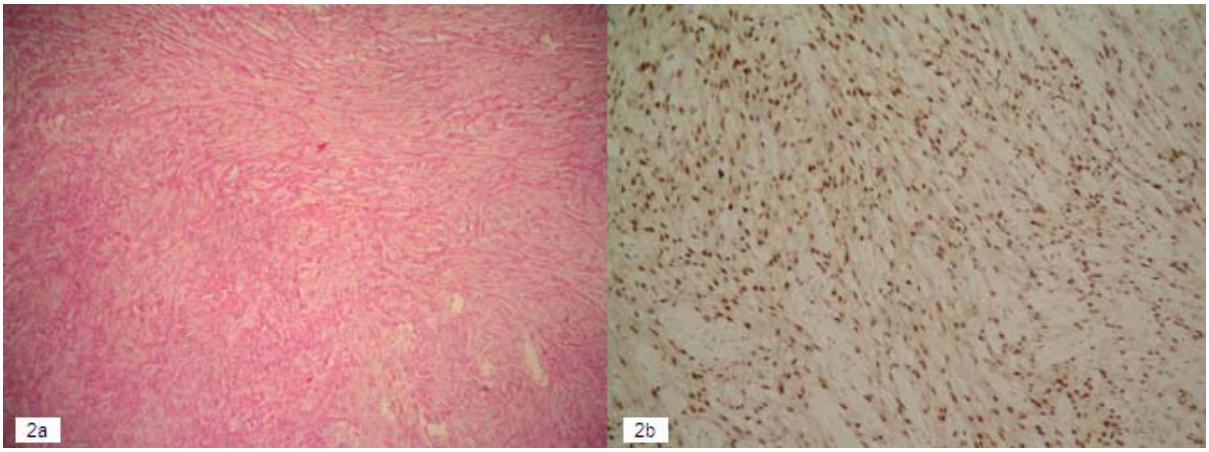


Fig. 2 a). Hematoxylin and eosin stain showing fascicular arrangement of fusiform nuclei smooth muscle cell with abundant extracellular collagen (Magnification 100x). b). The common collagenous stroma of tumor cells in trichrome stain (Magnification 100x).

The duration of surgery was about 25 minutes, and blood loss was less than 50 mL. Gross examination of the extracted tumor tissue showed the appearance of leiomyoma as a 3x4 cm oval lobulated nodule. On cut section it was firm, grey-yellow coloured, and showed no areas of hemorrhage, necrosis, or hydropic degeneration (Fig. 1b). The mass was reported as benign on frozen-section examination. There were no intraoperative or postoperative complications. The patient was discharged 2 days after surgery. Six weeks after surgery, the patient was asymptomatic. Pelvic examination findings were normal. The consent form of all images for publication from patient was obtained.

Histologic examination showed that the tumor was well-circumscribed, but not encapsulated. Histology revealed a benign smooth spindle cell tumor. The tumor cells were fusiform and had eosinophilic cytoplasm (Fig. 2a). The cytoplasmic membrane was distinct. Hypercellularity, mitotic activity, or nuclear atypia were not present. Islands of hyaline degeneration without necrosis and a rich collagenous matrix was noted in the tumor (Fig. 2b). On microscopic examination, the lesion appeared to consist of subperitoneal smooth muscle proliferations. On immunohistochemical examination, the tumor cells were positive for desmin and smooth muscle actin (SMA) (Fig. 3a) while they were negative for muscle specific actin (MSA) (Fig. 3b). The nuclei of the tumor cells were positive for estrogen and progesterone receptors.

## 3. Discussion

Vaginal leiomyoma is a very rare benign smooth muscle tumor of vagina (1,2). Up to now, a few hundred vaginal leiomyomas have been

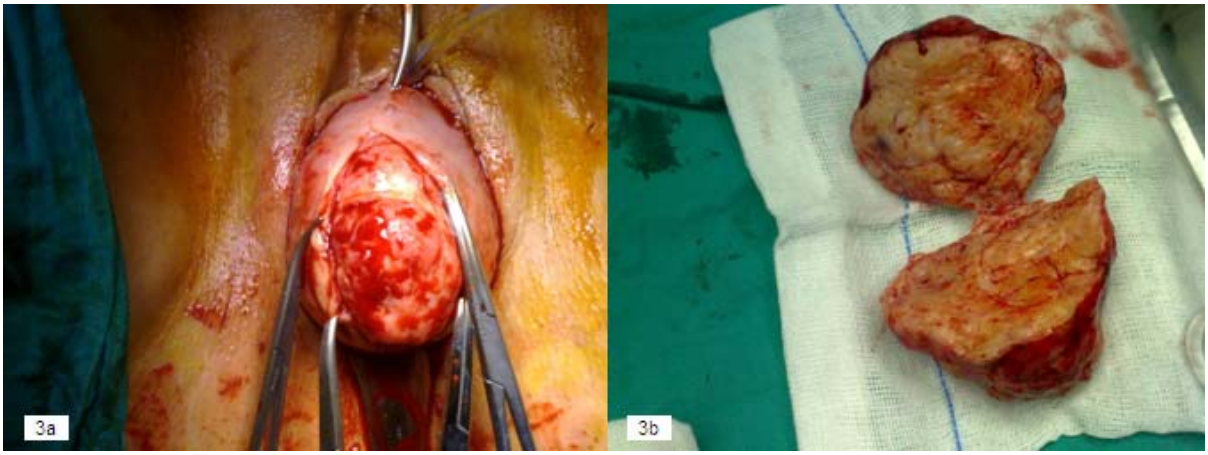


Fig. 3 a). The tumor cells are positive for smooth muscle actin (Magnification 200x). b). The tumor cells are negative for muscle specific actin (Magnification 100x).

reported in the world (3). Bennett and Erlich found only nine cases in 50,000 surgical specimens while in 15,000 autopsies reviewed at the Johns Hopkins Hospital only one case was identified (3). When we reviwed the cases in our hospital, this was the first case in the last 20 years.

Though the formation of leiomyoma of the vagina begins at a much earlier age, it is seen frequently between the ages of 35 and 50 years because of slow growth characteristic of the tumor (1,2). Vaginal leiomyomas usually have no relation with the uterus and unlike uterine leiomyomas, they predominate in white women (1,2). Although the leiomyomas are common in women, they have also been reported in men (6). The majority of these tumors are localized and mobile masses. Also, they are usually solitary and small in size, approximately 3-4 cm in diameter, but occasionally may be multiple or enormous in size (1,2). In 1965, Kettle and Loeffler reported a case of the largest vaginal leiomyoma with a weight of 1,450 g (7). These are not tender tumors. In our case the leiomyoma had arisen from the anterior vaginal wall, was solitary and single, was 3-4 cm in diameter and there was no relationship between the uterus and the vaginal leiomyoma.

Leiomyomas may be seen anywhere in the smooth muscle cells (1-4,8). The extrauterine sites of this tumour are round ligament, uterosacral ligament, ovary, inguinal canal, kidney and very rarely vagina and vulva. The tumor which has an asymptomatic clinical period at the onset, may cause complaints such as pain, protrusion of the mass from vagina, dyspareunia, constipation, leucorrhea, bleeding and urinary tract symptoms due to growing over time (>6 cm) (1-3). They are often diagnosed incidentally when they grow outside of the uterus. Ultrasonography (USG) pelvic Magnetic Resonance Imaging (MRI) and Computed Tomography (CT) scan can be used to diagnose, but histological examination should be performed to make certain diagnosis (1-3,8).

The pathogenesis of vaginal leiomyoma is completely unknown, but they are hormon-dependent tumours (1,2) and so they may be regress spontaneously after menopause. Vaginal leiomyomas resemble typical uterine leiomyomas at both gross and microscopic levels. But, the majority of published reports so far suggests that vaginal leiomyomas do not originate from uterine muscle cells (1,2). Vaginal leiomyomas are thought to arise from the smooth muscle of the vagina, rectum, bladder or urethra, or vascular smooth muscle, or embryonal cell rests within the vagina (7,8). There does not appear to be any correlation between the occurrence of leiomyoma in the vagina and any other sites (1,2). Biochemical studies and genetic analysis suggest that vaginal leiomyoma arises independently from a single smooth muscle cell and there are karyotypic discordance even between multiple leiomyomas (9). However, Meniru et al. reported a case of vaginal leiomyoma co-existing with multiple leiomyomas in the uterus and the broad ligament (10). In addition, few writers have given an impulse to idea that vaginal leiomyomas develop from a breakaway group from the uterus (8). If this was true, the incidence of vaginal leiomyoma should be parallel to that of uterine leiomyomas.

In the differential diagnosis, the localization of the mass should be taken into consideration. In addition, the variable consistency of the mass can lead to preoperative misdiagnosis. When the mass is found in anterior vaginal wall; cystocele,

urethrocele, urethral diverticulum, inclusion cysts, cervical myoma and prolapse of the uterus should be considered. If the mass is found in the posterior vaginal wall; rectocele, enterocele, inclusion cysts and tumours of the rectum and the rectovaginal septum should be considered. In addition to the differential diagnosis, gartner duct cysts, inclusion cysts, paraurethral and Bartholin's cysts, endometriosis and malignant tumours of the vagina should be kept in mind. Although it is rare low-grade leiomyosarcoma should also be considered in the differential diagnosis (5).

These tumours have to be removed immediately to prevent further growth and sarcomatous change in future (1,2,5). The treatment of the vaginal leiomyoma is surgical enucleation and the vaginal approach has become the preferred method in the majority of cases. If the tumor is large or in an inaccessible localization in the vagina, the abdominal approach should be preferred (1-4). During surgical enucleation, it may be sometimes useful to put an urethral catheter into the urethra and a gloved finger into the rectum to prevent injury to these structures. Vaginal leiomyomas usually can be separated easily from surrounding tissues. In our case, we preoperatively put an urethral catheter to prevent the risk of urethral injury. Then, with transvaginal approach, the mass was removed completely and easily by sharp and blunt dissection following a midline vertical incision. Recurrence of the tumour is much lower than uterin leiomyomas (1,2). The mass is completely removed to prevent the recurrence of the tumor. Despite everything, if recurrence occurs oopherectomy should also be performed because it is an oestrogen-dependent tumour (1,2).

Pathologically, vaginal leiomyomas are usually solid single nodules and small in size. They are well circumscribed homogenous mass and resemble their uterine leimyoma (2). Macroscopically, on a cut section they are firm, grey-yellow coloured. Microscopically, these tumors consist of uniform smooth muscle cells with indistinct cell borders and eosinophilic cytoplasm. Cystic degeneration can be seen in large tumors (2,10). Unlike uterine leiomyomas, vaginal leiomyomas have a rich matrix of collagen tissue. In addition, progesterone and estrogen receptors are positive in these tumors such as uterine tumors. In our case similar findings were seen.

The rate of sarcomatous change of vaginal leiomyoma is very low, but may ocur (5). In a series of 11 cases, the incidence of sarcoma has been reported as 9.1% and the sarcomatous masses of the same series had been seen usually in the posterior vaginal wall. Just because of this, careful histological evaluation is required to rule out a malignant change. For the differential diagnosis of leiomyoma and leiomyosarcoma multiple biopsies should be taken. In the pathological evaluation, as evidence of leiomyosarcoma must be sought necrosis, mitosis, pleomorphism, and invasion of surrounding tissue. In our case, histologic examination revealed a leiomyoma with benign smooth muscle cell tumor. Hypercellularity, mitotic activity, or nuclear atypia in the tumor cells were not present.

As a result, vaginal leiomyoma is a benign gynecologic tumor. The treatment is surgical enucleation. According to state, the surgical approach is through vaginal or abdominal route. The tumor must be removed completely to prevent recurrence and a careful histological examination should be done to exclude malignancy following surgery.

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