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## Case Report

# The lantern on the dome of St. Paul's sign in cervical fibroid: a rare presentation and successful outcome

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## ABSTRACT

Uterine fibroids represent the most common benign tumours of the uterus and are typically located in the uterine body. Cervical fibroids are rare, accounting for only 1–2% of cases. We present the case of 24-year-old female, who was p1+0. She presented to our side with complaints of lower abdominal pain, menorrhagia and frequent micturition since past 1 year. Non-tender, firm, immobile abdominal mass equivalent to a 28-week gravid uterus, with smooth surface and regular margins, was detected on examination." Ultrasound showed bulky uterus with large fibroid compressing bilateral lower ureter leading as bilateral mild hydronephrosis. Computed tomography report showed similar findings, large posterior fibroid with central degenerative changes with bilateral hydroureteronephrosis secondary to extrinsic ureteric compression by the fibroid. Surgical management consisted of total abdominal hysterectomy with bilateral salpingo-oophorectomy. Histopathological analysis confirmed cervical leiomyoma with marked inflammatory changes. Recovery was uneventful. Giant cervical fibroids require careful preoperative planning and awareness of ureteric and vascular anatomy. When complications occur after conservative surgery, hysterectomy may be the safest option. The "lantern on Saint Paul's dome" sign aids clinical and radiological diagnosis.

**Keywords:** Uterine fibroids, Lantern on the dome of St. Paul's, Benign tumours

## INTRODUCTION

Uterine fibroids are the most common benign tumors of the uterus and represent the commonest benign monoclonal solid tumors in women.<sup>1</sup> They account for approximately one-third of hospital admissions to gynecological services.<sup>2</sup> Fibroid most commonly occurs in female of age 35 – 45 years. Fibroids are seen in 20-40% of women of reproductive age group.<sup>1</sup> The growth of the fibroids is generally dependent on estrogen and progesterone and they arise from a single myometrial cell hence they are monoclonal.<sup>1</sup> On the basis of position, the fibroids can be classified according to their extent of involvement into intramural which is most common, subserosal (projects outward), submucosal which projects into the cavity and others like cervical, broad ligament and

parasitic, pedunculated fibroids have a stalk and those without stalk are known as sessile fibroids.<sup>1,2</sup> Many fibroids are asymptomatic, and generally the symptoms depend upon the size, number and location of the fibroid.

Cervical fibroids are rare almost 1-2% of all the fibroids.<sup>1</sup> They can be divided into supravaginal (true cervical fibroid which is more common) and vaginal (arising from portio vaginalis which is rare). The cervical fibroids can grow in different directions. They are further classified into anterior posterior central and lateral.<sup>3</sup>

The symptoms are generally pressure effects. Anterior fibroids put pressure effects on bladder which leads to urinary retention or urinary frequency due to pressure over the uterovesical junction. Posterior cervical fibroids

compress the rectum and flatten it leading to painful defecation and constipation. Lateral cervical fibroids generally cause compression of ureters which causes hydroureter and hydronephrosis as seen in our case.

### CASE REPORT

A 24-year-old P1+0 presented to the gynecology outpatient department with complaints of lower abdominal pain, menorrhagia and frequent micturition since past 1 year. The patient had history of lower segment caesarean section 1.5 years back. There was no significant past medical history.

On examination, she had average build. Abdominal examination revealed a firm, immobile mass arising from the pelvis, reaching above umbilicus equivalent to 28-weeks gravid uterus. Bimanual pelvic examination showed large mass which was not felt separately from the uterus, B/L adnexa were clear, cervix was pushed anteriorly. The mass was non-tender.

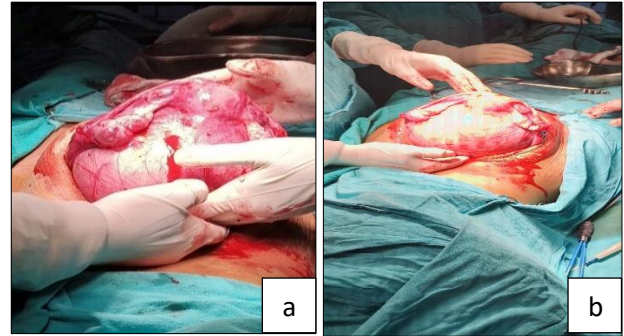
The trans abdominal ultrasonography showed bulky uterus with size of 197×117 mm with a large posterior wall fibroid of 16.5×9.5 cm compressing the lower ureters, leading to bilateral mild hydronephrosis. Endometrial thickness – 7.5 mm. bilateral ovaries were normal.

Computed tomography of the abdomen revealed, a large well-defined lesion arising from the posterior wall of the uterus, measuring approximately 18.6×13.1×11.2 cm. The lesion showed heterogenous attenuation with areas of low density, suggestive of central degeneration. It also revealed that the lesion caused mass effect of adjacent pelvic structures, displacing the uterus anteriorly, likely fibroid subserosa. The fibroid also exerted extrinsic compression on the distal ureters resulting in moderate bilateral hydronephrosis.

After counselling and informed consent, the patient was planned for exploratory laparotomy with myomectomy. Chances and risk of emergency hysterectomy and other risks were explained to the patient. As the patient was also anemic with Hb of 7 gm % 1 unit of PRBC was transfused for adequate optimization in the pre-operative period. The surgery was planned in coordination with the urology team after thorough preoperative evaluation and multidisciplinary planning. DJ stenting was attempted in preop period but could not be done as the ureteric orifices and trigone could not be assessed as the anatomy was distorted due to the mass. exploratory laparotomy was performed under spinal + epidural anesthesia.

During laparotomy, the patient was painted and draped well. Paramedian incision was given. after opening the abdomen in layers, a large cervical fibroid was identified with the uterine corpus above it representing classic ‘lantern on the dome of St. Paul’s’ sign (Figure 1).

Incision was given over the capsule and the fibroid was removed en mass. The fibroid cavity was obliterated. The fibroid occupied the entire cervix and uterine repair was not possible so finally the decision of hysterectomy was taken to avoid future complications like pyometra, hematometra and uterine rupture in previous pregnancies as the 2 units of blood were transfused intraoperatively (Figures 2-4).



**Figure 1 (a and b): Classic lantern ‘lantern on the dome of St. Paul’s’ appearance intraop.**



**Figure 2: Removal of large cervical fibroid intraop.**



**Figure 3: The cavity on posterior surface of uterus after removing fibroid.**

The excised specimen weighed 4 kg and measured approximately (20×11×16) cm. Cut section showed whorled, fibroid pattern. Histopathology confirmed benign leiomyoma.



**Figure 4: Attempt of uterine repair after myomectomy.**

## DISCUSSION

Cervical fibroids are rare. They are mostly sessile.<sup>2</sup> They might grow into the broad ligament to cause pressure effect on ureters; they can exert pressure anteriorly over the bladder and posteriorly over the rectum. The differential diagnosis of cervical fibroid included ovarian mass and uterine inversion mimicking fibroid or polyp.<sup>4,7</sup>

Radiological techniques like an ultrasonogram, computed tomography (CT) scan or magnetic resonance imaging (MRI) can be helpful in the diagnosis. Contrast enhanced CT scan can rule out involvement of ureters, and also helps in tracing the course of ureters as done in our case also.<sup>5</sup>

When we talk about the management/treatment of fibroids it depends on multiple factors like, size of the fibroid, location of the fibroid, if the patient desires reproductive and menstrual functions in future mainly medical management is preferred. Drugs commonly used in the medical management are GnRH agonists and antagonists which have anti estrogenic function and anti-progestogen like mifepristone.<sup>6</sup> Medical management can shrink the fibroids but do not completely resolve the problem always, the fibroid may regrow and symptoms reappear after cessation of medical therapy.

Newer advances like uterine artery embolization, and MRI guided high frequency ultrasonic ablation are also available but they are very costly and only effective for single fibroids of less than 8 cm, and are not useful in management of cervical fibroid so it could not be used in our case. Moreover, these techniques have a disadvantage of reappearance of a newer fibroid. Management of cervical fibroids is preferably surgical myomectomy or hysterectomy as per the patient criteria.<sup>8</sup>

## CONCLUSION

Cervical fibroids are a rare type of fibroid and may occasionally mimic ovarian tumours, especially when

associated with degenerative changes, leading to diagnostic confusion as an abdominal mass. Imaging modalities such as USG, Doppler, CT, and MRI are important for assessing the size, location, vascularity, and relation to surrounding structures. Successful management requires careful surgical planning and expertise to avoid injury to the ureters, bladder, and bowel. In women wishing to preserve fertility, enucleation of the cervical fibroid is the preferred treatment as it minimizes blood loss and protects adjacent organs.

Surgery for cervical fibroids is challenging because distortion of pelvic anatomy increases the risk of injury to the ureters, bladder, and uterine vessels. Careful surgical planning, including enucleation of the fibroid prior to hysterectomy and preoperative use of GnRH analogues, can help reduce complications and facilitate safer hysterectomy.

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