

*Scientific Journal of the Faculty of Medicine in Niš 2010;27(1):45-49*

*Case report* ■

## **Obstructive Uropathy And Acute Urinary Retention Caused By Uterine Fibroid In A Non-Pregnant Women - A Case Report**

---

Nirmala Jaget Lakkawar, Suriya Desikan, Thirupurasundari Rangaswamy

*Department of Obstetrics & Gynaecology, Aarupadai Veedu Medical College & Hospital, Kirumampakkam, Puducherry -607402, INDIA*

---

### **SUMMARY**

**A 38-year-old female gravida 2, para 2, sterilized patient was presented to the hospital with acute urinary retention and severe lower abdominal pain. Clinical and ultrasonographical examination revealed a marked distention of urinary bladder, enlarged uterus with posterior wall fibroid impacted in the pouch of Douglas. Intravenous pyelography revealed a moderate degree of bilateral hydroureter and hydronephrosis.**

**However, the renal function tests were within normal range. Urine examination revealed pyuria and multi-drug resistant *Staphylococcus aureus*. Total abdominal hysterectomy was resorted after considering the medical and social factors. Histopathological examination revealed intramural leiomyoma, complex hyperplasia of the endometrium and chronic cervicitis. Detecting that the fibroid could contribute to the development of acute urinary retention, cystitis and its appropriate management along with the uneventful recovery of the patient indicated the validity of the approach that would have led to serious renal complications. This paper focuses on the acute complications of the uterine fibroid, multidisciplinary diagnostic approach, and the importance of immediate intervention to prevent subsequent renal damage.**

**Key words:** posterior wall uterine fibroid, obstructive uropathy, acute urinary retention, hysterectomy

---

Corresponding author:

**Nirmala Jaget Lakkawar** •

tel. 91-413-2354059 •

e-mail: nirmalajaget@yahoo.co.in •

## INTRODUCTION

Uterine fibroids (Myomas/Leiomyomas/Leiomyofibromas) are the most common benign pelvic tumours and occur in 20-30% of women in their reproductive age. Ultrasound studies report the presence of at least one small myoma in 51% of women (1). These tumors arise from uterine myometrium and rarely from the cervix. In addition to smooth muscle proliferation, these tumors show the presence of high extracellular matrix contents including collagen and elastin, causing a generally hard, fibrous texture; hence, they are called fibroids.

Fibroids are more common in women with low parity (2). Race is an important epidemiological risk factor for uterine myomas. African - American women have a 3-fold higher incidence of clinically recognized myomas than Caucasian, Hispanic, or Asian women (3). Genetic predisposition, hormonal status and various growth factors influence the growth of myomas (4). Both estrogen and progesterone have a stimulatory effect on the growth of myomas and their prevalence increase with the advancement of reproductive years (5).

Fibroids vary in size from grain - sized to large uterine growth. They can be solitary or multiple, and are clinically characterized as intracavity, submucosal, intramural and subserosal, depending on their location within the uterus (6).

Most patients with uterine myomas are symptom-free. When the symptoms occur, they correlate with the myoma site, its size or already induced degenerative changes, and are associated with menorrhagia, dysmenorrhea and pelvic pain (7, 8). With increase in size of myomas, pressure to the adjacent visceral organs develops. Constipation and tenesmus occur as a result of posterior uterine wall myoma pressing the rectum and sigmoid colon (4). Although logically possible, significant obstructive uropathy resultant to urinary obstruction and acute urinary retention is rarely associated with the uterine fibroid (9).

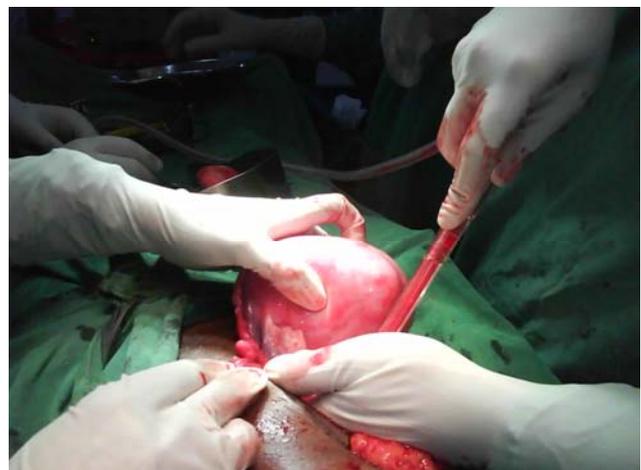
Herein, we report a case of large posterior wall uterine fibroid presented with acute urinary retention, bilateral hydroureter, hydronephrosis without any menstrual abnormalities.

## CASE REPORT

A 38-year-old woman gravida 2, para 2 was admitted to the emergency room with complains about difficulty in micturition, constipation for the last 15 days, complete inability to pass urine for the last day and severe lower abdominal pain. The patient had already undergone tubal ligation procedure and was reported to have regular menstrual cycle (4/30-32 days) with mild dysmenorrhea and no history of menorrhagia. On clinical examination of the patient, the vital parameters were found to be stable. The urinary bladder was found to be markedly distended and on catheterization, 2000 ml of straw colored urine was drained out. On per-abdominal

examination, a firm mobile mass arising from the pelvis was palpable. On per-vaginal examination, cervix was found to be pointing forward and hitched against the pubic bone. The uterus was retroverted and irregularly enlarged to about 16 weeks size, and a round firm mass of approx 6 x 6 cm size arising from the posterior wall of body of uterus was palpated through posterior fornix. The uterus was found to be impacted in the pouch of Douglas. Trans-abdominal ultrasonography showed enlarged uterus measuring 17 x 11 x 13.5 cm with two hypoechoic uterine masses compatible with uterine fibroid; one in the posterior wall measuring 7.8 x 6.5 cm, and another in the left antero-lateral region measuring 4.5 x 3.5 cm. Trans-vaginal ultrasonography was also performed to confirm the trans-abdominal ultrasonographic findings. Renal ultrasound and intravenous pyelography (IVP) revealed a moderate degree of bilateral hydroureter and hydronephrosis. The course of the dilated ureters could be traced up to posterior wall myoma. The excretory function was found to be normal in IVP. No renal stones or renal cysts were noticed. The hemogram showed 12 g/dl of hemoglobin concentration; total and differential leukocyte counts were within normal limits. The renal function test were also within normal range (BUN - 26 mg/dl, Serum creatinine - 1.2 mg/dl); however, the urine analysis revealed pyuria and bacteriuria. Urine culture and sensitivity tests showed multi-drug resistant *Staphylococcus aureus* (MRSA) sensitive to Clindamycin and Chloramphenicol antibiotics. Based on the clinical and ultrasonographic findings, a diagnosis of obstructive uropathy due to uterine fibroid was made. Considering the complications of obstructive uropathy due to fibroid and parity-related information, the patient was advised to undergo hysterectomy and the same was accepted.

Pre - operative bilateral Double J (DJ) ureteric stenting was done to prevent any ureteric injury during the surgical procedure. On laparotomy, a large intramural myoma measuring 7.8 x 6.5 cm was seen in the posterior wall of the body uterus, which was found to be impacted in the pouch of Douglas (Figure 1).



**Figure 1:** Posterior surface of the enlarged uterus Arrow (→) Left Ovary

A small fibroid measuring 4.5 x 3.5 cm was also seen in the left antero-lateral region of the uterus. The cervix and the neck of the urinary bladder were found hitched against the pubic bone, thus causing obstruction to the outflow of urine. Both ovaries were found to be normal. Total abdominal hysterectomy was performed (Figure 2).



**Figure 2:** Posterior wall myoma in the body of the uterus

Histopathological examination of the excised mass revealed intramural leiomyoma and the uterine tissue showed complex hyperplasia of the endometrium. Chronic inflammatory reaction was noticed in the cervical tissue.

The post-operative recovery of the patient was uneventful. The patient was prescribed oral Clindamycin for a period of 7 days. The sutures were removed on the 7<sup>th</sup> day and the patient was discharged. The DJ stents were removed on the 15<sup>th</sup> day. At the follow-up one month after the surgery, the patient reported no difficulty in voiding urine, no sensation of bladder fullness. Ultrasonography revealed considerable regression of hydronephrosis and hydronephrotic changes and her post-void residual urine volume was less than 100 mL.

## DISCUSSION

Fibroids are often asymptomatic and require no therapy (10). However, depending upon its location and size, these tumors can cause menstrual abnormalities, pelvic pressure to the adjacent viscera and pain. Amongst all complications, both acute urinary retention and obstructive uropathy are rare events in women with intramural uterine myomas. There have been few reports of uterine leiomyomata causing obstructive uropathy (9, 11, 12). Asymptomatic uterine mass may cause acute urinary retention from bladder outlet obstruction (13-15). The proposed theory for urinary retention associated with impacted pelvic mass suggests that a retroverted, enlarged uterus caused by pregnancy or fibroids can become impacted in the pelvis, especially if the

patient has an overhanging sacral promontory. This can cause compression of proximal urethra and the neck of urinary bladder through mass effect, and after a period of difficult urination the condition progresses to complete obstruction (16). In the case described, the obstructive uropathy was due to the presence of posterior wall uterine myoma causing retroversion of the uterus and impaction in the pouch of Douglas. This resulted in the compression of the neck of urinary bladder as well as proximal urethra between cervix and the pubic bone.

The size of the fibroid is not a determining factor in causing the compression of the ureters leading to urinary tract obstruction. A very large giant uterine tumour (weighing 25 lbs or more) can attain enormous size without producing appreciable symptoms; however, a single large-sized fibroid or multiple fibroids can cause obstruction if they are large enough to reach the umbilicus (17). In our patient, a single moderately large-sized fibroid (measuring 7.8 x 6.5 cm) in the posterior wall of the uterus body caused impaction and obstruction to outflow resulting in acute urinary retention followed by hydronephrosis and hydronephrosis. Similar findings of urinary stasis due to uterine myomas have also been reported earlier (9, 11, 14, 17).

Wu et al.(9) reported the development of acute nephritis and impaired renal function because of the presence of large-sized myoma in the pouch of Douglas compressing the ureters against the ramus of the ishium causing partial obstruction, hydronephrosis, hydronephrosis and urine stasis in a multigravida post-menopausal women.

Intravenous pyelography was performed to examine the renal excretory functional characteristics and ureteral distortions. Magnetic resonance imaging (MRI) can delineate the spatial relationships of pelvic structures and the pathophysiology of the urinary retention (18). However, MRI was not performed in this case considering the high cost involved, acute urinary symptoms and the anxiety of the patient.

The choice of approach for the management of uterine myomas depends on many factors, both medical and social, including age, parity, childbearing aspirations, extent and severity of symptoms, size, location and number of myomas, associated medical condition(s), possibility of malignancy, and desire for uterine preservation (4). The preferred surgical procedures are to perform myomectomy or hysterectomy. The major problem associated with myomectomy is heavy operative blood loss and postoperative adhesion formation. Hysterectomy is a reasonably safe procedure offering the best result in terms of relieving the symptoms of bleeding, pressure, or pain caused by fibroids in the patients diagnosed with multiple myomas and do not desire to retain fertility (4, 19, 20). In the present case, total abdominal hysterectomy was performed with the compliance of the patient in order to provide symptomatic

relief and prevent complications in the future due to fibroid.

Although acute nephritis and impaired renal function have been reported by other workers, in the present case renal function tests were within the normal range. Since the patient was presented with the symptoms of acute urinary retention and cystitis, diagnosing that fibroid would have contributed to the development of cystitis and urinary retention, and the presence of MRSA as the causative factors indicated an emergency hysterectomy.

The uneventful recovery of the patient indicated the validity of the approach that would have led to serious renal complications.

### CONCLUSION

The potential sequelae of large uterine fibroids impacted in the pouch of Douglas include obstructive uropathy, acute urinary retention and renal dysfunction.

We suggest that any patient in late reproductive age presented with acute/recurrent cystitis and urinary retention should be considered for diagnostic imaging to detect uterine myoma and its consequences on urinary system in order to determine the extent of damage and to design the management approach according to the need in each individual case. Hysterectomy is recommended for uterine myomas for complete recovery from urinary obstruction and related complications in the patients who are not desirous of child bearing. DJ stenting of the ureters helps in preventing any possible ureteric injury during surgery.

### Acknowledgements

The authors are thankful to the Dean, the Medical Superintendent, Aarupadai Veedu Medical College & Hospital, Puducherry, India for providing necessary facilities and encouragement.

### References

1. www.healthcoachmd.com/handouts/uterine%20myomas.html
2. Tendal VR. Jeffcoates's Principle of Gynaecology; 5<sup>th</sup> edition; Butterworth, London, 1993; pp 419-32.
3. Marshall LM, Spiegelman D, Barbieri RL, Goldman MB, Manson JE, Colditz GA, Willett WC, Hunter DJ. Variation in the incidence of uterine leiomyoma among premenopausal women by age and race. *Obstet Gynecol* 1997; 90(6):967-73.
4. Wallach EE, Vlahos NF. Uterine myoma: An overview of development, clinical features and management. *Obstet Gynaecol* 2004; 104 (2):393- 406.
5. Schwartz SM, Marshall LM, Baird DD. Epidemiologic contributions to understanding the etiology of uterine leiomyomata. *Environ Health Perspect* 2000; 108 (Suppl 5):821-827.
6. Buttram VC Jr and Reiter RC. Uterine leiomyomata: etiology, symptomatology, and management. *Fertil Steril* 1981; 36 (4):433-45.
7. Wegienka G, Baird DD, Hertz-Picciotto I, Harlow SD, Steege JF, Hill MC, Schectman JM, Hartmann KE. Self-reported heavy bleeding associated with uterine leiomyomata. *Obstet Gynecol* 2003; 101(3):431-7.
8. Stovall DW. Clinical symptomatology of uterine leiomyomas. *Clin Obstet Gynecol* 2001;44(2):364-71.
9. Kai-Yun Wu, Chih-Feng Yen, Kuan-Gen Huang. Obstructive uropathy with acute pyelonephritis induced by a voluminous postmenopausal uterine Leiomyoma. *Taiwan J Obstet Gynecol* 2009;48(1):82-3.
10. Van Voorhis B. A 41-Year-Old Woman With Menorrhagia, Anemia, and Fibroids -Review of Treatment of Uterine Fibroids. *JAMA* 2009; 301(1):82-93.
11. Derbent A and Turhan NO Acute urinary retention caused by a large impacted leiomyoma *Arch Gynecol Obstetr* 2009; 280 (6):1045-7.
12. Mavromatidis G, Dinas K, Mamopoulos A, Delkos D, Rousso D. Acute urinary retention due to a uterine fibroid in a non-pregnant woman. *Clin Exp Obstet Gynecol* 2009; 36 (1):62-3.
13. Yang JM, Huang WC. Sonographic findings of acute urinary retention secondary to an impacted pelvic mass. *J Ultrasound Med* 2002; 21 (10):1165-9.
14. Novi JM, Shaunik A, Mulvihill BH, Morgan MA. Acute urinary retention caused by a uterine leiomyoma: a case report. *J Reprod Med* 2004; 49 (2):131-2.
15. Gupta S, Manyonda IT. Acute complications of fibroids. *Best Pract Res Clin Obstet Gynaecol* 2009; 23 (5):609-17.
16. Ward JN, Lavengood RW, Draper JW. Pseudo bladder neck syndrome in women. *J Urol* 1968; 99:65-8.
17. Bansal T, Mehrotra P, Jayasena D, Okolo S, Yoong W, Govind A. Obstructive nephropathy and chronic kidney disease secondary to uterine leiomyomas. *Arch Gynecol Obstet* 2009; 279 (6):785-8.
18. Sala E. Magnetic resonance imaging of the female pelvis. *Semin Roentgenol* 2008 ;43 (4):290-302.
19. Kjerulff KH, Langenberg PW, Rhodes JC, Harvey LA, Guzinski BM, Stolley PD. Effectiveness of hysterectomy. *Obstet Gynecol* 2000; 95(3):319-26.

20. Dutton S, Hirst A, McPherson K, Nicholson T, Marsh MA. UK multicentre retrospective cohort study comparing hysterectomy and uterine artery embolisation for the treatment of symptomatic uterine fibroids (HOPEFUL Study): main results on medium-term safety and efficacy. *BJOG* 2007; 114(11): 1340-51.

## **OPSTRUKTIVNA UROPATIJA I AKUTNA URINARNA RETENCIJA IZAZVANA UTERINIM FIBROIDOM KOD BOLESNICE KOJA NIJE BILA U DRUGOM STANJU - PRIKAZ SLUČAJA**

Nirmala Jaget Lakkawar, Suriya Desikan, Thirupurasundari Rangaswamy

Odeljenje za ginekologiju i akušerstvo  
Aarupadai Veedu Medicinski fakultet i bolnica  
Kirumampakkam, Puducherry-607402, INDIA

### **Sažetak**

Tridesetosmogođišnja bolesnica, G2, P2, sterilizovana, javila se lekaru sa akutnom urinarnom retencijom i jakim bolom u donjem delu abdomena. Klinički i ultrasonografski pregled je otkrio izraženo veći volumen bešike, uvećanu matericu i na zadnjem materičnom zidu fibroid impaktiran u duglasu. Intravenozna pijelografija je ukazala na srednji stepen bilateralnog hidrouretera i hidronefroze. Međutim, testovi bubrežne funkcije su dali rezultate u normalnom opsegu. Pregled urina je ukazao na pijuriju i *Staphylococcus aureus*. Nakon razmatranja medicinskih i socijalnih faktora, pribegli smo totalnoj abdominalnoj histerektomiji. Histopatološki pregled je otkrio intramuralni lejomiom, kompleksnu hiperplaziju endometrijuma i hronični cervicitis. Otkriće da je fibroid mogao da utiče na razvoj akutne urinarne retencije, cistitis i adekvatan način lečenja bolesnice, ukazalo na validnost je pristupa koji je mogao da dovede do ozbiljnih renalnih komplikacija. Akcenat ovog rada je na komplikacijama uterinog fibroida, multidisciplinarnom dijagnostičkom pristupu i značaju hitne intervencije kako bi se sprečilo posledično oštećenje bubrega.

**Ključne reči:** fibroid zadnjeg zida materice, opstruktivna uropatija, akutna urinarna retencija, histerektomija

