

Acute urinary retention due to a uterine fibroid in a non-pregnant woman

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Summary

Background: Uterine fibroids represent a rare cause of acute urinary retention (AUR) and most cases have been reported in pregnant women. **Case:** We report the case of a non-pregnant woman who presented with AUR due to a uterine fibroid. **Conclusion:** When evaluating patients who present with severe oliguria or anuria, it is important to rule out urinary tract obstruction. Early identification of reversible causes of acute oliguria and institution of appropriate therapy are crucial to prevent the development of protracted acute renal failure. Close collaboration between gynaecologists, urologists and radiological services is required to promptly diagnose and treat uterine fibroid-associated AUR, a rare but reversible cause of acute renal failure.

Key words: Uterine fibroids; Acute urinary retention; Acute renal failure; Oliguria; Anuria.

Introduction

Acute urinary retention (AUR) is a urological emergency characterized by a sudden and painful inability to pass urine [1]. It is estimated that 10% of men in their seventies and a third in their eighties will present with this condition within the next five years [2]. AUR is 13 times less frequent in women, occurring in approximately seven women per 100,000 per year [3]. There are several potential etiologies for this condition, classified as anatomic, neurologic, pharmacologic, psychogenic, functional and myopathic [4]. Large uterine fibroids represent a rare cause of AUR and most cases have been reported in pregnant women [5-7]. We report the case of a non-pregnant woman who presented with AUR due to a uterine fibroid.

Case Report

A 47-year-old woman (gravida 1, para 1) came to the emergency department of our hospital because of worsening dyspnoea, progressive abdominal distention and bilateral swelling of her legs. In addition, she reported that during the last two weeks she was able to pass urine only in the standing position. She was in the perimenopausal period. Her medical history was unremarkable and she had not been taking any medication. The patient was afebrile, her heart rate was 100 beats/min and blood pressure was 125/80 mm Hg. On physical examination, the patient had a distended bladder and bilateral lower-extremity edema (2+). On gynaecological examination, the uterus was increased in size. On admission, the laboratory values included: white blood cell count $9.5 \times 10^9/l$ (with neutrophils 78.5% and lymphocytes 13.0%), hemoglobin 10.8 mg/dl, hematocrit 31.8%, MCV 79.6 fl, MCH 26.9 pg, urea 37 mg/dl and creatinine 1.4 mg/dl. Renal ultrasonography (US) revealed dilatation of both ureters and the pelvis and calices of both kidneys; the

size of both kidneys was normal. Transvaginal US demonstrated an enlarged uterus (measuring 202 x 168 x 128 mm) and multiple uterine fibroids. The biggest fibroid was located on the posterior lower segment of the uterus, measured 103 x 98 x 87 mm and caused anteflexion of the uterine cervix, which in turn compressed the bladder neck. A computed tomography (CT) scan was performed and disclosed an enlarged fibroid uterus and an overextended urinary bladder rising up to the kidneys, and bilateral dilatation of the urinary tract up to the renal calices (Figure 1). Bladder catheterization was performed and yielded 6,900 ml of urine. The next day, a drop in the creatinine level to 0.9 mg/dl was noted. The patient underwent total abdominal hysterectomy with bilateral salpingo-oophorectomy. The histopathological diagnosis was uterine fibroid with no evidence of malignancy. The postoperative course was uneventful.

Discussion

Uterine fibroids (leiomyomas or myomas) are benign tumours arising from uterine smooth muscle cells [8]. They are the most common gynecological tumours during the reproductive age and are clinically apparent in about 25% of women [8]. Moreover, their prevalence in surgical specimens might be as high as 77% [8]. Most myomas are asymptomatic, but many women have significant symptoms warranting therapy, mainly uterine bleeding, pelvic pressure and reproductive dysfunction [8]. Large uterine fibroids may also induce AUR, but this is a rare occurrence [5-7]. AUR due to these estrogen-dependent tumours occurs primarily during pregnancy, due to the enlargement of both uterus and fibroid [5-7]. However, fibroids can cause AUR even in non-pregnant women, as illustrated in our case.

When evaluating patients who present with severe oliguria or anuria, it is important to rule out urinary tract obstruction. Early identification of reversible causes of acute oliguria and institution of appropriate therapy are crucial in order to prevent the development of protracted acute renal failure [9]. The latter is associated with high

Revised manuscript accepted for publication September 22, 2008

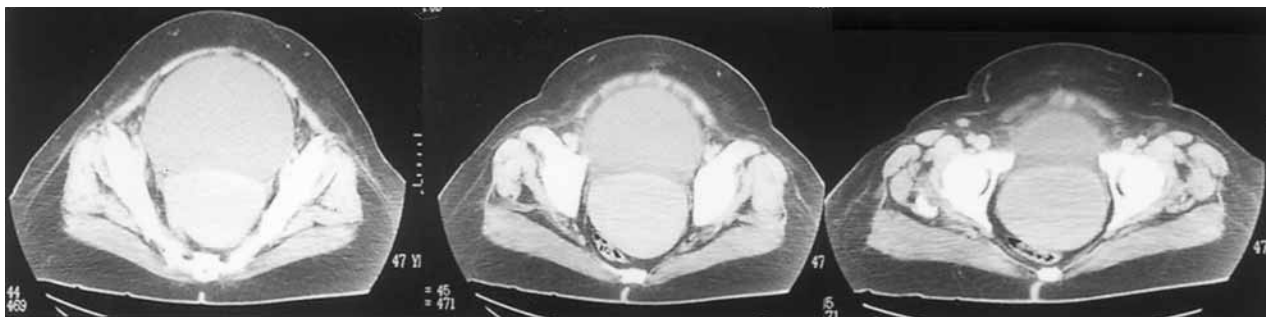


Figure 1. — Computed tomography scan showing overextension of the urinary bladder and an enlarged fibroid uterus compressing the bladder neck and rectum.

morbidity and mortality [9]. In addition, the potential for recovery of renal function is inversely related to the duration of obstruction [10].

Urinary tract obstruction should be first sought by history and physical examination [10]. Bladder catheterization can rule out urethral obstruction [10]. Renal US is the study of choice to detect obstructive uropathy since it is sensitive, non-invasive, does not expose the patient to radiation and is relatively simple and fast to perform [10]. Obstructive uropathy is usually manifested by dilatation of the urinary tract above the obstruction [10]. However, a non-dilated collecting system does not necessarily exclude the possibility of obstruction, especially in cases of recent obstruction (< 24 hours) or in patients with hypovolemia [10]. Encasement of the ureters by malignant tissue or retroperitoneal fibrosis may also result in failure of the urinary tract to dilate even when obstructed [10]. When US does not reveal urinary tract dilatation but there is a high index of clinical suspicion for obstruction, CT, cystoscopy with retrograde ureteropyelography or antegrade pyelography may be used to confirm the diagnosis [10]. Transvaginal US may also provide useful information if a gynaecological condition is suspected as the cause of the obstruction [5].

The treatment of urinary tract obstruction depends on the underlying cause [10]. Bladder outflow obstruction can be relieved by passage of a urethral catheter but relief of upper tract obstruction may require either antegrade (percutaneous nephrostomy) or retrograde (cystoscopy and retrograde ureteral catheterisation) approaches [10]. If a fibroid uterus is strongly suspected as the etiology of her urinary retention, hysterectomy is an appropriate management option [5].

In conclusion, uterine fibroids represent a rare cause of AUR. Close collaboration between gynaecologists, urologists and radiological services is required to promptly diagnose and treat this reversible cause of AUR.

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