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Case Report

Renal failure secondary to pelvic organ prolapse; Can it be predicted?

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Abstract

Pelvic organ prolapse is a condition that, if left untreated, may lead to obstructive uropathy, hydronephrosis and end stage renal disease. We present a case of a patient who presented to our institution in Athens, Greece with acute kidney failure secondary to complete uterine prolapse, also referred to as procidentia.

Key words

obstructive uropathy; renal failure; procidentia; prolapse, hydronephrosis

Introduction

Pelvic organ prolapse affects millions of women worldwide. It is the third most common indication for hysterectomy in the United States with an estimated risk of 11 percent for a woman to undergo surgery for prolapse or incontinence[1]. Studies have demonstrated that 30 to 65 percent of women presenting for routine gynecologic care have stage 2 prolapse, according to the Pelvic Organ Prolapse Quantification (POP-Q) validation system[2, 3]. Pelvic organ prolapse is commonly associated with urinary symptoms, including voiding difficulties and detrusor overactivity[4]. Furthermore, procidentia is a known cause of obstructive uropathy and hydronephrosis that, if the diagnosis is missed or left untreated, can result in renal failure. Herein, we present a case of a patient who presented to our institution with abdominal pain, urinary retention and acute kidney failure secondary to severe uterine prolapse.

Case report

An 82-year-old female presented to the emergency room with 20 days of suprapubic abdominal pain and voiding difficulties. On pelvic exam, the patient was diagnosed with a complete stage 4 uterine prolapse. Her labs revealed a WBC count of 3.9 x10^3/dl, Ht of 29%, Hb of 9.0 g/dl, potassium of 6.0, creatinine level of 5.6 mg% while normal values range between 0.7 to 1.2 mg% and urea level of 135.4 mg/dl. She was admitted to the hospital for further evaluation and treatment. In collaboration with the Uro-

gynecology department, the uterus was restored to its anatomic position and a 16-french Foley catheter was placed, along with a vaginal tampon, since there was a failed attempt for a ring pessary insertion. A renal bladder ultrasound was ordered, which revealed bilateral severe hydronephrosis with renal cortex atrophy due to the prolonged situation of obstructive uropathy. Urology evaluation showed little chance for the renal function, which continued to demise, to return to normal. After a failed attempt to place ureter stents (pig-tails), we decided to proceed to surgical repair of the prolapse. A total abdominal hysterectomy was performed with intraoperative placement of ureter catheters and the patient was discharged a few days later. Unfortunately, renal function never resolved and the patient has end stage renal disease and started dialysis 3 times per week.

Discussion

Pelvic organ prolapse is a common condition, especially in women of advanced age. It often affects the urinary tract and can result in acute and chronic renal failure secondary to obstruction. Pathophysiology includes kinking of ureters bilaterally, leading to obstructive uropathy[5]. In our case, we can assume that the patient's uropathy and renal failure was secondary to ureteral obstruction due to the ultrasonographic fndings of bilateral distended pelvicaliceal system, severe hydronephrosis and renal cortex atrophy. Since the prevalence of procidentia is proportional to increasing age, a gynecologic exam should be performed in all women presenting with urinary obstruction or hydronephrosis with an unknown cause[6].

The patient in our case was an elderly female who had a complete uterine prolapse leading to obstructive uropathy, which led to chronic kidney failure. Our patient's history indicated that it was a neglected case, therefore the chances of the resumption of the renal function were significantly low. The failure of pessary insertion and the continuous impairment of the renal function led to the decision of performing a total abdominal hysterectomy. At first, the patient was placed at a lithotomy dorsal position and catheterization of the ureters was attempted. Placement of only the right pig-tail was successful, so a decision was made for an open surgery. Left pig-tail was placed intraoperatively through a small incision in the left ureter. Hydronephrosis and elevated creatinine values never resolved and the patient was led to systematic dialysis.

Hydronephrosis and obstructive uropathy as secondary to uterine prolapse was first described in 1923[7]. Several years later, Young et al., reported two cases in which uterine prolapse caused renal failure and simple measures restored renal function to normal. The authors stated that uterine prolapse is a potentially reversible but often overlooked cause of renal failure, since the diagnosis is often delayed or neglected[8]. In 2002, Chitale at al., presented with two cases of renal failure secondary to uterine prolapse. In both cases, the reposition of the uterus back to the pelvis and the placement of a ring pessary resolved the renal function[9]. In 2005, Peces et al., presented a case of a patient with severe bilateral hydroureteronephrosis and chronic renal failure secondary to neglected complete uterine prolapse. After failing to insert a ring pessary, a vaginal hysterectomy was performed in order to prevent an irreversible renal damage[10]. Another study by Constantini et al., demonstrated the prevalence of hydronephrosis in women who had undergone surgery for pelvic organ prolapse. The authors concluded that pelvic organ prolapse repair usually resolves prolapse-related hydronephrosis and prevents serious long-term complications. It was also stated that in patients with severe genital prolapse, the ultrasound findings are crucial for the diagnosis of early-stage morphologic and functional abnormalities, thus indicating the most appropriate therapeutic option and manage the optimal follow-up of these patients[11]. In 2015, a study by Dancz et al., demonstrated that the prevalence of hydronephrosis in women with advanced pelvic organ prolapse was 30.6%[12]. Another case of a patient with stage 4 uterine prolapse followed by dysouria and urine retention was presented by Benkirane et al., where vaginal hyster-

ectomy led to a regression of hydronephrosis and disappearance of uterine retention and dysouria and overall normalization of renal function[13].

Pelvic organ prolapse is a common condition that usually affects aged and multiparous women. However, it is not that common to be associated with ureteral obstruction and renal failure.

We strongly believe that in order to detect early an advanced situation, such the case described above, it is imperative for patients to seek medical advice as soon as possible, since pelvic organ prolapse can be easily detected. Also, it is necessary and important for gynecologists to perform a thorough physical examination and ultrasound imaging, in order to assess the presence of hydroureteronephrosis and renal morphology. Therefore, renal failure could be suspected and diagnosed at an early stage thus determining the optimum treatment option for each case.

Conflict of interest

The author declares no conflict of interest.

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