

Prostatic Cyst with Bladder Outlet Obstruction Symptoms: Case Report

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ABSTRACT

The prostatic cysts are uncommon lesions usually detected incidentally. The incidence is reported as less than 1% most often occurs as small and asymptomatic lesions located medially in the gland; when they get a big size causes different lower urinary tract symptoms. Only 5% are symptomatic. The symptoms depend on the size and location of the lesion. Minimal access surgery (endoscopic) is recommended for its treatment. We present a case with the diagnosis of Prostatic cyst at the bladder neck treated with transurethral resection of the lesion. Histopathological investigation revealed benign prostatic cyst. At six months of follow up the patient remains free of symptoms.

Key words: Prostatic Cyst, Bladder Outlet Obstruction, Transrectal Ultrasound (TRUS), Transurethral Resection of the Prostate (TURP).

INTRODUCTION

The prostatic cysts are extremely rare and frequently diagnosed incidentally with an incidence of less than 1%. The uses of imaging studies have made cyst incidences increased. Usually, they are small and asymptomatic located in the middle of the gland. When they have a big size causes different lower urinary tract symptoms. Only 5% are symptomatic. Dik et al. (1996) reported a series of transrectal ultrasound on 704 patients with symptoms of bladder outlet obstruction or lower urinary tract symptoms and a medical prostatic cyst was found in 34 (5%). These might include painful ejaculation, hematospermia infertility, urinary tract infections, chronic pelvic pain and prostatitis-like syndrome symptoms, but can rarely result in obstructive and irritative urinary tract symptoms if located close to the bladder neck or posterior urethra (Kilinc et al., 2015; Tambo et al., 2007).

The cystic lesions that may be encountered when one performs prostate ultrasound (US) for these varied indications are classified based on cyst location, shape and embryogenic origin, interconnection with prostatic urethra or seminal vesicle and presence of sperm in the cyst (Kilinc et al., 2015; Tambo et al., 2007). The increasing use of transrectal ultrasound (TRUS) has resulted in the discovery of incidental prostatic cysts. Galosi et al. (2009) classified 6 distinct cyst types based on TRUS and pathological features,

including midline cyst, cyst of the ejaculatory ducts, cyst of the parenchyma, multiple cysts, complicated cyst, cystic tumor and cyst secondary to other diseases. Kilinc et al. (2015); Tambo et al. (2007) and Nghlem (1990) classified the prostatic cysts lessons in congenital (mullerian duct and utricle) or acquired (ejaculatory duct cysts). The Mullerian duct cysts and Prostatic utricle cysts are considered two separate clinical entities. The first arising from remnants of the mullerian duct and the second as their name implies, are due to dilatation of the prostatic utricle. These two conditions can be very difficult or impossible to distinguish clinically and sonographically. Mullerian duct cysts usually occur in the 3rd and 4th decades of life. Utricle cysts are most often detected earlier in life (Nghlem, 1990).

The mullerians cysts are considered a remnant of the duct of Müller. They are commonly presented with irritative urinary symptoms such as hematuria, suprapubic or rectal pain and palpable suprapubic mass and sonographically extend cephalic and lateral to the midline of the prostate gland (Kilinc et al., 2015; Tambo et al., 2007; Nghlem, 1990).

The association of urogenital anomalies like the unilateral renal agenesis, undescended testis and hypospadias has been reported with the presence of cysts of the utricle that tend to be smaller in size and rarely



Figure 1: (Abdominal ultrasonography findings): midline prostatic cysts (2.4 cm × 1.9 cm).

spread outside the prostate to be considered a dilation of the utricle; it gives some symptoms and on post voiding ultrasound the cystic image is seen in the middle part of the gland and the distinctive clinical feature is post micturation dribbling of urine. Mullerian duct cysts have no such associations. This difference is the reason for the belief that utricle cysts have a different embryologic origin than mullerian duct cysts. The endoscopic catheterization of the cyst allows the diagnosis of this entity (Kilinc et al., 2015; Tambo et al., 2007; Nghlem, 1990; Kenneth and John, 1974; Young and Frierson, 1988).

The ejaculatory cysts are rare and raise the theory caused by a congenital obstruction of the duct or by secondary inflammation. It is asymptomatic and diagnosed accidentally during investigation for some other pathology.

When large in size are accompanied of perineal pain, dysuria, hemospermia and pain during ejaculation. When it has a big size the ultrasound shows as cystic lesion at the ejaculatory duct, the small cysts are generally seen as cystic lesions in the central and lateral area of the base of the gland at the level of verummontanum. It is associated with the presence of stones to that level. The aspiration of the cyst may report the presence of sperm if testicular function is normal. After injection, contrast can be noted also in the seminal vesicle cyst on the side of the dilated (Nghlem, 1990; Kenneth and John, 1974).

The cystic degeneration of benign prostate enlargement often occurs with relative frequency and is commonly located in the area of transition. These cysts are small and rarely give symptoms; the puncture is obtained with frequency starch bodies, hemorrhagic fluid, infarction or necrosis of the hyperplasic nodule (Nghlem, 1990).

The prostate abscesses are usually complications of prostate infections (bacterial prostatitis) (*Escherichia coli*) being the more frequent causal germ. It has a high incidence in patients in the 5th and 6th decade of life, although its incidence has increased at young ages related

to individual sexual behaviors. The patients is presented with typical signs and symptoms of prostatitis; the ultrasound may show an enlarged prostate, sometimes focally, such as an injury to the hypoechoic or anechoic, with irregular walls, internal echoes or partitions. These lesions are generally observed toward the midline of the gland (Nghlem, 1990; Kenneth and John, 1974; Young and Frierson, 1988). The clinical presentation improvement and the response to the antibiotic treatment confirm the diagnosis. Other entities reported rare are parasitic prostate cysts (for example, *Echinococcus cyst* and *Bilharzial cyst*) and cystic carcinoma (Kilinc et al., 2015; Tambo et al., 2007; Kenneth and John, 1974; Young and Frierson, 1988).

In the literature, many treatments of prostatic cysts recommended include TRUSG guided drainage or sclerotherapy, endoscopic transurethral resection or transurethral incision with endoscopic urethrotomy, Holmium: YAG laser for the marsupialization of the cyst wall and in some cases, open surgery (Kilinc et al., 2015; Dik et al., 1996; Tambo et al., 2007; Galosi et al., 2009; Kenneth and John, 1974). We present a case with a diagnosis of prostatic cyst.

CASE REPORT

A 54-year-old male patient was admitted in our hospital with a history of chronic suprapubic pain of more than 6 months and nocturia. Genital examination, external meatus and digital rectal examination of the patient revealed normal findings. PSA 0.44 ng/ml. Abdominal ultrasonography revealed normal prostate size (3.6 cm × 3.4 cm), volume 22 ml with midline prostatic cysts (2.4 cm × 1.9 cm) and high post voiding residual (156 ml) (Figure 1). His International Prostate Symptom Score (IPSS) was

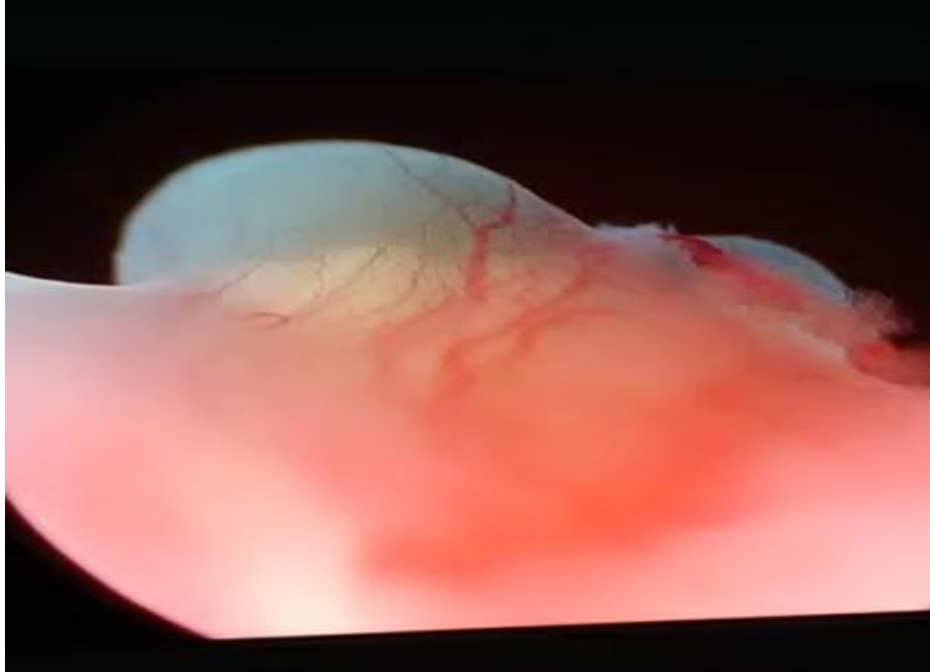


Figure 2: (Cystoscopy finding): cystic mass at the 6 o' clock position on the bladder neck.

20, while his quality of life (QoL) score was 4. The cyst was homogeneous on Pelvic CT, but in MRI was not visualized. Under spinal anesthesia, Cystoscopy examination was performed and normal prostate size and a cystic mass at the 6 o' clock position on the bladder neck was observed, which appeared to be obstructing the bladder outlet (Figure 2). The mass was unroofed using the transurethral resection loop. Subsequently, a 16 Fr Foley catheter was inserted at the end of the intervention. On the 1st post-operative day, the urethral catheter was removed. The histopathological examination revealed a benign prostatic cyst. During the 6-month follow-up period, no complications were observed and symptoms disappeared. The anterograde ejaculation was preserved.

DISCUSSION

The increasing use of the imaging studies as an abdominal ultrasound and transrectal ultrasound (TRUS) has increased the incidental finding of prostatic cysts. The reports of prostatic cysts as can be observed in the literatures increased every time (Kilinc et al., 2015; Dik et al., 1996; Tambo et al., 2007; Galosi et al., 2009). Galosi et al. (2009) reported that midline cysts are observed by TRUS in 9.8% of cases located posteriorly, similar as our case of a prostatic cyst located at 6'clock position on the bladder neck.

Kilinc et al. (2015) reported a 26-year-old male patient with a history of chronic suprapubic pain for more than 2 years and painful ejaculation. Transrectal ultrasound

(TRUSG) revealed a midline prostatic cyst with approximately 10 × 12 mm diameter. The pelvic MRI verified the same and midline prostatic cyst. Minimally invasive endoscopic intervention using holmium was done: YAG laser was considered to treat long term lower urinary tract symptoms in order to minimize potential harm inflicted on the urogenital tract and future sexuality of the young patient. During 3- and 6-month follow-up periods, no complications were observed. Suprapubic pain and painful ejaculation disappeared (Kilinc et al., 2015).

In addition, Tambo et al. (2007) reported two cases of symptomatic prostatic cysts arising around the bladder neck causing bladder obstruction for a prolonged period of time (5 to 10 years) and quality life was affected. The patients were investigated with Uroflowmetry (obstructive pattern) and abdominal ultrasonography (high post voiding residual). The abdominal ultrasonography revealed prostatic cysts arising around the bladder neck. The cyst was homogeneous on pelvic CT and MRI and with flexible cystoscope showed a smooth bulge anteriorly at the proximal prostatic urethra. The cysts at the 11 o' clock positions on the bladder neck appeared to be obstructing the bladder outlet and did not show prostatic hypertrophy. The mass were unroofed using the transurethral resection loop. The histopathological examination revealed benign prostatic cysts. The anterograde ejaculations were preserved and post-operatively the symptoms were resolved. Tambo et al. (2007) reported that the highest number of patients with symptomatic prostatic cysts were 34. The symptoms included obstructive urinary tract symptoms (40%), urinary retention (33%), urodynia (9%)

and infertility (6%). Symptomatic prostatic cysts were seen in relatively young patients and usually measures 3.6 cm.

Joo-Yong et al. (2010) reported the first case of a prostatic cyst in Korea in a 41-year-old man presented with LUTS. The prostatic cyst was located anteriorly and acted like a checking valve during urination. His International Prostate Symptom Score (IPSS) was 20, while his quality of life (QoL) score was 4. Uroflowmetry showed that the peak flow rate was 9 ml/s (136 ml voided volume) and the volume of residual urine was more than 200 ml; a digital rectal examination revealed a normal prostate. Urine cytology did not suggest malignancy and his serum PSA level was 3.12 ng/ml. The patient was treated with transurethral resection of the cyst and the obstructive symptoms successfully improved.

Tambo and Joo-Yong cases of prostatic cysts arising around the bladder neck similar to our case was reported by Tambo et al. (2007) and Joo-Yong et al. (2010) but the localization of the cyst of our case was posterior.

The retention cysts of the prostate resulted from the obstruction of the glandular acinis causing its dilation. It usually appears between the 5th and 6th decade of life. Usually, it causes no symptoms but when they are located at the level of the bladder neck it can cause obstructive symptoms by closure of the bladder. They are mostly located toward the transitional zone and measure between 1 to 2 cm in diameter or less. It may be in one way indistinguishable from cystic changes of the BPH.

Taketoshi et al. (2012) reported a 54-year-old man with dysuria. Transabdominal ultrasonography revealed a multilocular cyst at the neck of the bladder and a cystoscopy revealed bladder neck obstruction. The initial treatment was tamsulosin and abdominal magnetic resonance imaging (MRI) and the cyst disappeared. After 2 years the patient came again with difficulty of urination and transurethral resection of the cyst was performed. Histopathological examination reported a retention cyst.

Hiroshi et al. (2009) reported a 34-year-old man presented with a prostatic retention cyst around the bladder neck causing prostatitis-like symptoms. The investigations (TRUS, MRI and Cystoscopy) revealed a projecting prostatic cyst which occupied the bladder outlet and seemed to cause the symptoms. Transurethral resection of the cyst was performed and the symptoms were markedly improved. Histopathologically, the cyst was retention cyst of the prostate.

Dell (2012) reported a 28 year old young man with obstructive and irritative voiding disorders caused by a prostatic cyst, located in the anterior and left lateral lobe of the prostate gland. The prostatic cyst was incised and marsupialized by transurethral resection. A post-operative follow up observed an increase in Qmax with no residual urine and negative urine culture. The patient showed no retrograde ejaculation or erectile dysfunction. On the other hand, Dik et al. (1996) in their series of ultrasound guide reported transurethral marsupialization of the cyst through

prostatic floor incision in 18 patients without complications.

The recommended treatment for intra-urethral prostatic cyst is transurethral resection. This treatment can resolve obstructive urinary tract symptoms and preserve ejaculation in the absence of the prostatic hypertrophy (Tambo et al., 2007; Kenneth and John, 1974; Joo-Yong et al., 2010; Taketoshi et al., 2012; Hiroshi et al., 2009; Dell, 2012).

The complications are rare. Young patients need special care to preserve ante grade ejaculation and future fertility. In order to minimize the risk of complications, the use of lower-Fr endoscopic instrument with minimal trauma to the bladder neck and urethra is recommended (Kilinc et al., 2015; Tambo et al., 2007; Joo-Yong et al., 2010; Taketoshi et al., 2012; Hiroshi et al., 2009; Dell, 2012).

The malignancy nature of the prostatic cysts is less frequent. The lower male genitourinary tract is an extremely rare location for adenoid cystic carcinoma. Frankel and Craig (1974) reported the first case with a diagnosis of adenoid cystic carcinoma of the prostate as an extremely rare variety of prostate adenocarcinoma. The tumor was histologically identical to adenoid cystic carcinoma of the salivary gland and breast. These sites has favorable prognosis. The patient was treated with transurethral resection of the tumor with negative long-term follow-up (Kenneth and John, 1974; Young and Frierson, 1988).

Since 1974, for more than a decade, only four well-documented adenoid cystic carcinomas have been reported in detail in the literatures while in 1988, two new cases were reported by Young and Frierson, (1988) in men of 60 and 68 years of age with urinary tract obstruction of long duration. The patients were treated with transurethral resection. Diagnoses confirmed one patient had a pelvic lymph node dissection and recovered 26 nodes, all of which were negative for tumor; a radical prostatectomy was then performed. The patient was observed to be healthy six years after the operation. The other patient was treated with transurethral resection and radiation and has been healthy since eight months after the operation (Young and Frierson, 1988).

Adenoid cystic carcinoma is considered by several authors as a subtype of prostatic adenocarcinoma (Kenneth and John, 1974; Young and Frierson, 1988). This can be a justification of the therapeutic treatment follow up in these cases because evidence suggests that the adenoid cystic-like tumor has an excellent prognosis on the basis of the limited experience to date (Kenneth and John, 1974).

Conclusion

Minimal access surgical techniques (endoscopic) were observed to be a more preferable treatment for prostatic cysts with excellent results and minimal risk of complications.

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