Laparoscopic management of a giant prostatic utricle: A case report and review of literature

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ABSTRACT

Prostatic utricle is a Mullerian duct remnant with an incidence of 1 %. Excision of utricle is challenging because of the close proximity of seminal vesicle, ejaculatory ducts, bladder, rectum, ureter, and nerve plexus. Here, we report the case of a 23-year-old male presented with complaints of painful terminal hematuria associated with clots along with retrograde ejaculation. The abdominal and local examination was within normal limits. MRI pelvis showed a large non-communicating cystic structure present in the pelvic cavity, compressing posterior wall of the urinary bladder, seminal vesicle, anterior wall of the rectum and also causing left hydroureteronephrosis. After evaluation, the patient was diagnosed with giant prostatic utricle cyst. Laparoscopic excision of prostatic utricle cyst was done successfully. Postoperative period was uneventful and the patient was discharged in satisfactory condition. Laparoscopic excision of prostatic utricle cyst is technically challenging but with acceptable complications and good surgical results.

Keywords: *Giant, laparoscopic, Prostatic utricle, Surgery.*

Prostatic utricle is a Mullerian duct remnant and is homologous to the vagina. Most common age group for utricle cyst is first and second decade of life. In association with hypospadias, the incidence of prostatic utricle is 11-14 %. Isolated prostatic utricle incidence is 1 % [1].As the severity of hypospadias increases, the incidence of utricle cyst increases. The incidence of prostatic utricle in association with perineal hypospadias is 50% [2]. Excision of utricle is challenging because of the close proximity of seminal vesicle, ejaculatory ducts, bladder, rectum, ureters and nerve plexus [3]. We report a case of giant prostatic utricle successfully managed laparoscopically along with a review of the literature.

CASE REPORT

A 23-year-old unmarried male presented with painful terminal hematuria associated with clots for two months. The patient was not having any other urinary or abdominal complaint. There were no comorbidities or any previous surgical history.

General physical examination and vitals were within normal limit. Abdominal and local examination were within normal limit. Digital rectal examination was suggestive of cystic structure in the prostatic area.

Ultrasound (USG) kidney ureter bladder region (Fig. 1a)was suggestive of a large cystic structure(12.6 x 9.5 x 8.1 cm) posterior to urinary bladder exerting mass effect over urinary bladder and left vesicoureteric junction with the ectopic malrotated left kidney. In Magnetic resonance imaging pelvis (MRI), a 90 x 85x 92 mm fluid-filled (370cc) non-communicating cystic structure present in the midline superiorly reaching just above pelvic cavity and compressing posterior wall of the urinary bladder, seminal vesicle, anterior wall of rectum and also causing left hydroureteronephrosis suggestive of giant prostatic utricle cyst (Fig. 1b, 1c and 1d).

Retrograde urethrogram (RGU) findings were suggestive of dye going into the bladder and cystic structure posterior to the bladder causing compression of the bladder (Fig. 2). On cystourethroscopy, there was a small opening just proximal to veru leading into a large blind ending cavity. Left ureteric orifice could not be visualized and the right ureteric orifice was normal. After evaluation, a diagnosis of giant prostatic utricle was made and the patient was planned for laparoscopic excision of the cyst.

The patient was positioned supine. A 12 mm camera port was placed slightly superior to the umbilicus in the midline. The 12 mm port was inserted in mid-clavicular line on the right side and 5 mm port was placed on the left side in mid-clavicular line. Additional 5 mm ports were placed on both sides in the anterior axillary line. The large cystic structure was seen behind the bladder (Fig. 3a, 3b and 3c). Bilateral ureters were identified, dissected and preserved. The right seminal vesicle and vas deferens were removed due to dense adhesions with the cyst. Complete excision of the cyst was done. The mucosa of the neck of utricle cyst opening in the urethra was fulgurated. Foley's catheter was inserted. Postoperative period was uneventful.

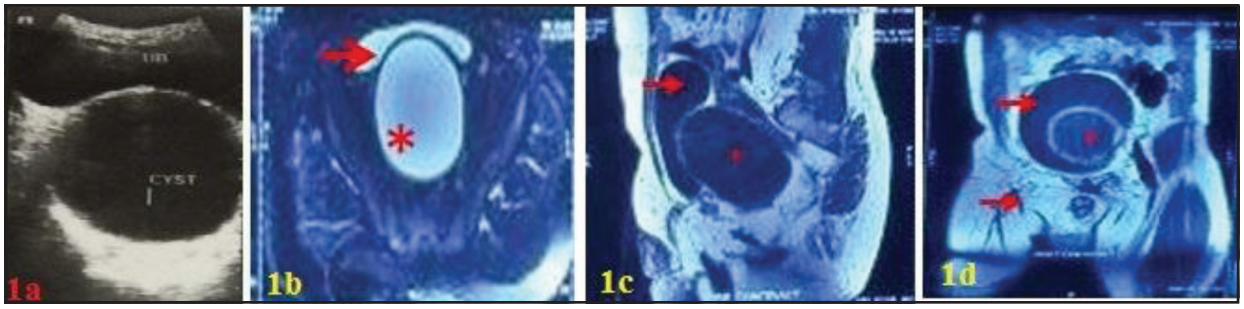

Figure1: 1a: Transverse plane- ultrasound of pelvis showing large cystic structure in the midline posterior to urinary bladder (UB- urinary bladder, Cyst- utricle cyst); Figure 1b, 1c and 1d: MRI (1b- axial, 2c- coronal, 2d- sagittal) sections showing large utricle cyst (marked as asterisk) and urinary bladder (marked as arrow)

Figure2: Retrograde urethrogram showing (arrow) urinary bladder, (asterix) utricle cyst

The patient was discharged on the fourth postoperative day and the catheter was removed on the tenth day.

The patient was followed with fresh micturating cystourethrogram (MCU)(Fig. 4)and USG abdomen at one month and 6 months which showed normal upper tract and a small remnant cyst of approximately 2x2 cm posterior to prostatic urethra and urinary bladder. Only USG abdomen was done at 1 year to see if the cyst has increased in size and causing any ureteric obstruction. Intervention to be done only if the patient becomes symptomatic or cyst is causing ureterovesical junction or lower ureter obstruction resulting in hydroureteronephrosis.

DISCUSSION

In the early stages of development in all human embryos, the Mullerian duct is present. During embryological development, incomplete regression of the Mullerian duct leads to prostatic duct cyst known as prostatic utricle [4]. Most of the time prostatic utricle is asymptomatic. It can present with storage and voiding lower urinary tract symptoms, terminal hematuria, pelvic mass, suprapubic or rectal pain. In a study by Desautel MG *et al*, it was found that out of a total 26 patients diagnosed with prostatic utricle, 10 patients were asymptomatic and diagnosed incidentally during evaluation for perineoscrotal hypospadias [5]. Various imaging modalities can be used to ascertain the diagnosis of utricle cyst. RGU accurately differentiate between utricle cyst and periprostatic cysts. Enlarged utricle can be demonstrated readily on MCU. Due to high signal intensity, MRI can also identify these cysts easily [6]. During cystourethroscopy, cannulation and dye infusion can demonstrate communication between urethra and cyst [5].

Surgical excision of symptomatic prostatic utricle is its definitive management. Though in literature, it appears that open excision gives better result yet due to cyst location, it is too low for abdominal approach and too high for a perineal approach. Various approaches described in the literature include open, laparoscopic and endourological approach. Cyst deroofing, cyst orifice dilatation, endoscopic transurethral cyst catheterization, and aspiration can be done endourologically. Endourological approach though is minimally invasive but the recurrence rate is high [7]. Ahmed and Palmer reported successful cyst aspiration and tetracycline

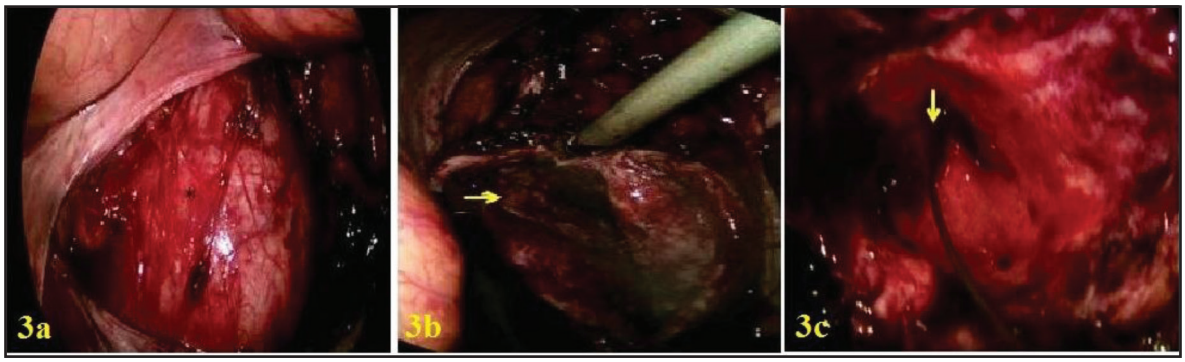

Figure3: Intraoperative pictures of utricle dissection (3a - utricle cyst, 3b- opened up utricle cyst, 3c- opening in posterior urethra through which guidewire was negotiated into the urethra)

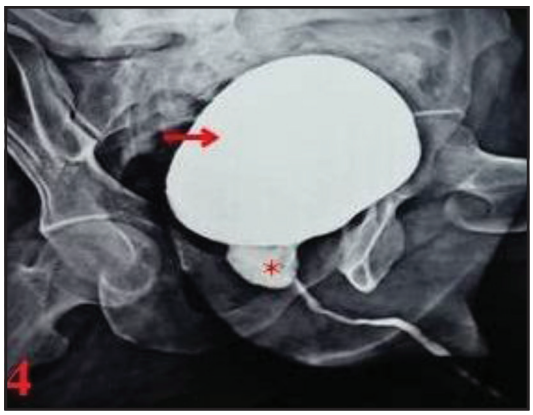

Figure 4: Micturating cystourethrogram showing- (arrow) urinary bladder and (asterisk) remnant cyst

sclerotherapy via transperineal route using transrectal ultrasound guidance [8]. Coppens L *et al* in a study of 65 patients with prostatic utricle managed endoscopically found 82% success rate of endoscopic approach [9]. The laparoscopic excision of utricle cyst in a child was reported in the literature by Willets *et al* [10]. The laparoscopic approach provides a clearer and closer view of deeper pelvic structures but suturing to close posterior urethra deep in the pelvis is difficult with laparoscopy. We did successful excision of the cyst laparoscopically. Open excision can be done using perineal, suprapubic, extravesical transperitoneal, transvesical transtrigonal, parasacral, anterior sagittal approaches. Open excision appears to give better results in children but due to extensive and difficult dissection, it can lead to incomplete cyst excision, excision of one or both seminal vesicles, portions of the prostate and vas is needed [11]. In our case also, the cyst was densely adherent to vas and seminal vesicle leading to sacrifice of these structures on one side. In a study by Jia W *et al*, comparing open with the laparoscopic route for excision of prostatic utricle, it was found that laparoscopic excision was associated with a shorter hospital stay, early recovery and similar postoperative results compared to open surgery [12]. In a study by Yeung *et al*, laparoscopic excision of prostatic utricle was done successfully in four cases [13]. Postoperatively, the patients can be followed by USG and micturating cystourethrogram at 1month, 6 month and 2 years. The probability of early recurrence and subsequent growth in size is more.

CONCLUSION

Laparoscopic excision of prostatic utricle cyst is though technically demanding yet it is feasible with good surgical results.

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