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Report of a Case of Cowper's Gland Syringocele in an Adult Male Patient

Hatem Abdulkareem Abdulmajeed
Clinical Imaging Department, Hamad Medical Corporation,
Doha, Qatar

Parag Suresh Mahajan
Clinical Imaging Department, Hamad Medical Corporation,
Doha, Qatar

Shanmugavel Chinnakaruppan
Clinical Imaging Department, Hamad Medical Corporation,
Doha, Qatar

Nasser Jassim Al Maslamani
Clinical Imaging Department, Hamad Medical Corporation,
Doha, Qatar

ABSTRACT

Cowper's gland syringocele is a rare and often underdiagnosed condition characterized by cystic dilatation of the Cowper's gland ducts, presenting with various radiological patterns. This report details a unique case of a giant Cowper's gland syringocele in an adult male, highlighting the MRI findings and management outcomes.

Keywords: Cowper's Gland, Syringocele, Cystic dilatation, MRI.

INTRODUCTION

Cowper's gland syringocele, an uncommon and underdiagnosed condition, involves cystic dilatation of the Cowper's gland ducts and exhibits diverse radiological patterns [1]. While syringoceles are typically observed in pediatric patients, they are rare in adults, where they may present with urinary tract infections, gross hematuria, and voiding symptoms [2]. To date, only 32 cases of adult-onset syringoceles have been reported [3]. This case report discusses a giant, infected Type-II perforated Cowper's gland syringocele in an adult, initially diagnosed via voiding cystourethrogram (VCUG) and subsequently monitored with Magnetic Resonance Imaging (MRI).

CASE REPORT

A 24-year-old male presented with intermittent right testicular pain over two days, with no history of trauma, fever, abdominal pain, or dysuria. An ultrasound performed six months earlier to rule out torsion revealed no evidence of torsion, orchitis, or other focal lesions (Figure 1a, b). Despite this, the patient continued to experience pain, prompting an MRI in June 2022 at the request of a urologist to evaluate both testes for any underlying pathology. The MRI

suggested a diagnosis of Cowper's gland syringocele based on the anatomical location of the Cowper's gland duct. The patient was discharged with advice for follow-up and further management.

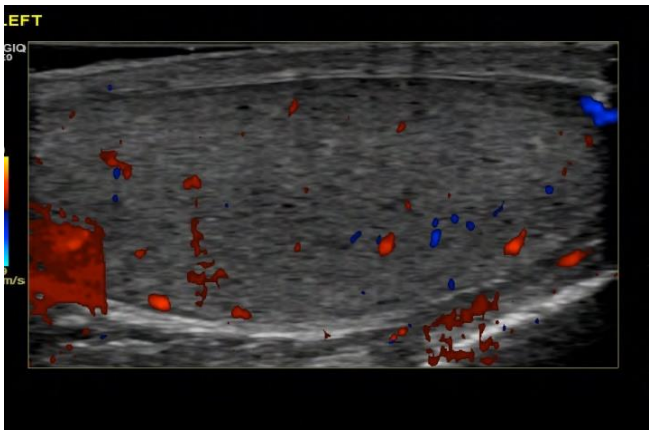

Figure 1a

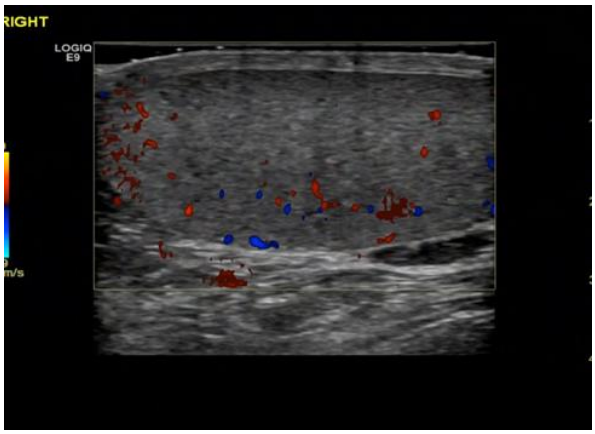

Figure 1b

Figures 1a, b: Ultrasound of the scrotum showing both testes are normal in size and echogenicity with normal blood flow on color Doppler. No obvious intra- or extratesticular lesions.

Pelvic MRI, including the urethra, revealed normal corpora cavernosa and a well-defined, multiloculated tubular cystic structure parallel to the ventral aspect of the proximal bulbar urethra, measuring 10.4 x 21 x 11 mm. This structure had a hypointense capsule on STIR, high signal intensity on T2 (Figure 4a, b), and low signal intensity on T1 without enhancement or diffusion restriction, with thin septa within the lesion (Figures 2a, b).

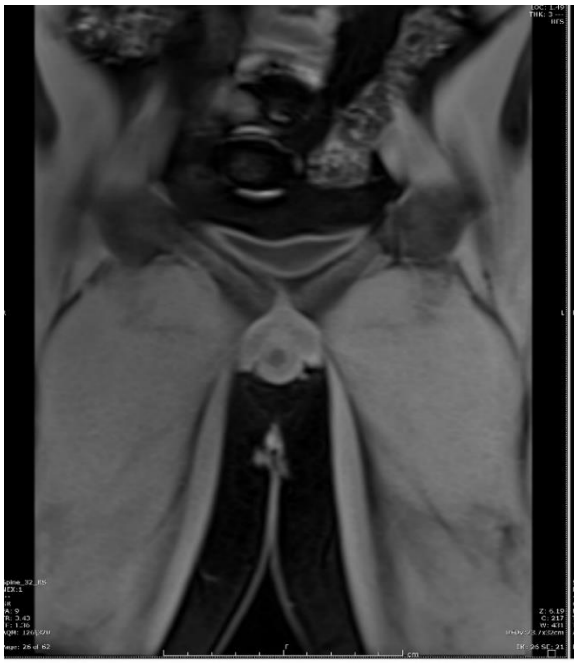

Figure 2a

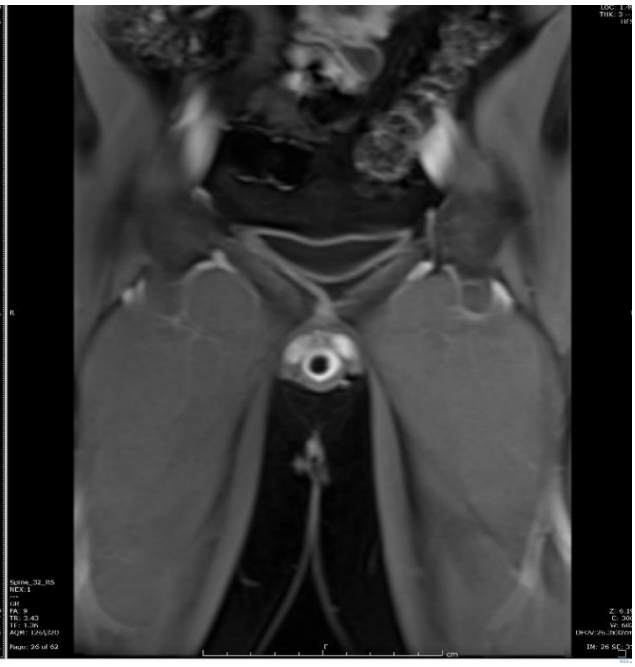

Figure 2b

Figures 2a, b: Coronal T1W pre-contrast and T1W post-contrast images showing no enhancement on post-gadolinium T1WI images.

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Small thread-like extensions were seen passing posteriorly and superiorly, joining the membranous urethra. The canal length was 10 mm, and the width was 2 mm. The proximal bulbar urethra was mildly compressed by these cystic structures.

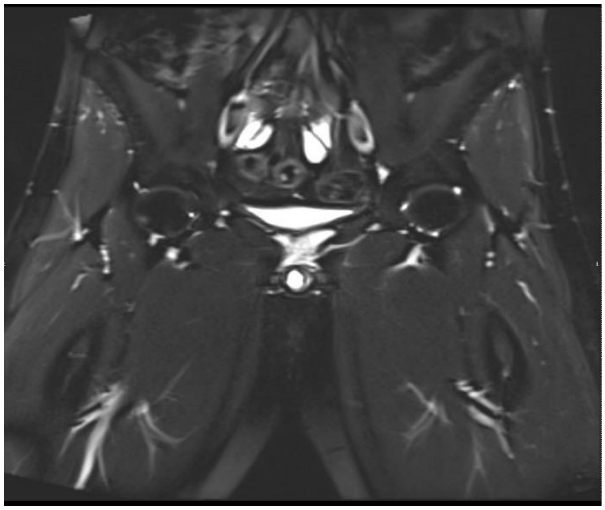

Figure 3a

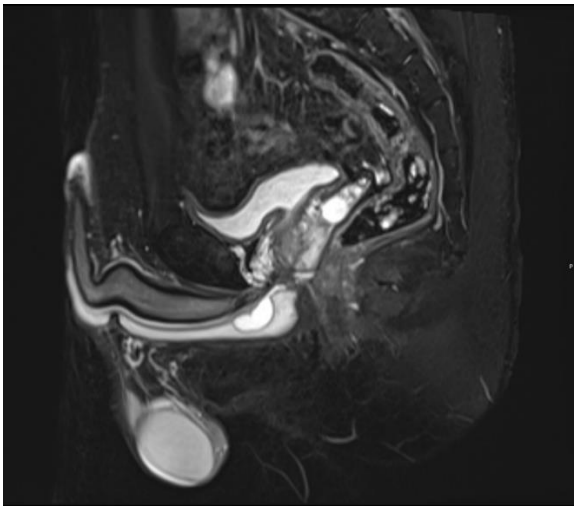

Figure 3b

Figures 3a, b: Coronal and sagittal T2-Fatsat images revealing hyperintense, cystic structures.

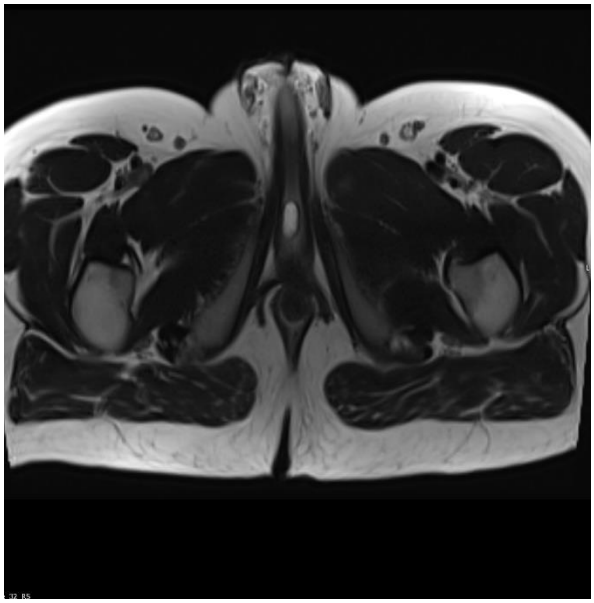

Figure 4a

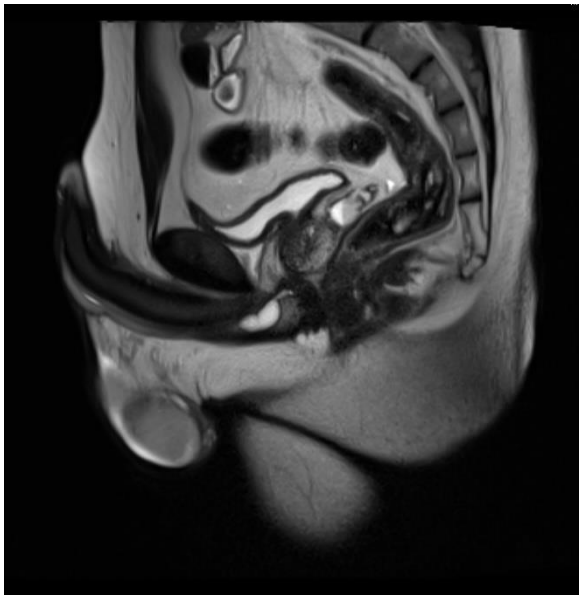

Figure 4b

Figures 4a, b: Axial and sagittal T2 images showing hyperintense, cystic structures and a mildly compressed proximal bulbar urethra, indicative of a giant Cowper's gland syringocele.

Differential Diagnosis

- Cowper gland hemorrhagic cyst: This may be incidentally detected on MRI of the prostate, necessitating follow-up MRI to monitor hemorrhage evolution and exclude underlying neoplasms.
- Cowper gland carcinoma: Rare, including adenocarcinoma and adenoid cystic carcinoma subtypes. Initial evaluation may involve transperineal ultrasound, with CT and/or MRI required for further characterization and staging.

DISCUSSION

Cowper's glands, also known as bulbourethral glands, are a pair of pea-sized exocrine glands located within the male urogenital diaphragm. These glands form two collecting ducts, each approximately 2.5 cm in length. Despite anatomical variations, most ducts converge into a single passage that opens at the posterior aspect of the bulbar urethra [4]. The secretions from Cowper's glands provide urethral lubrication and play a crucial role in sperm motility and protection during ejaculation. Cowper's syringocele, a condition characterized by cystic dilatation of these ducts, is typically diagnosed in the pediatric population but is rare in adults [5]. However, maintaining a high index of suspicion can increase the detection rate of these lesions in adults [6,7].

The etiology of Cowper's syringocele remains unclear, with both congenital and acquired types described. Obstruction of the bulbourethral duct orifices due to stasis and pressure changes can lead to mucus and/or urine accumulation, resulting in cystic dilatation. This can subsequently cause bacterial colonization and secondary infection [4]. Literature describes four types of syringocele: Type-I (simple syringocele with mild ductal dilatation), Type-II (perforated syringocele with a dilated distal duct communicating with the bulbar urethra), Type-III (imperforate syringocele with no urethral communication), and Type-IV (ruptured syringocele). Types I, II, and IV are considered "open" lesions and are more likely to cause symptoms such as postvoid dribbling, purulent urethral discharge, and hematuria. Type-III lesions are "closed" and more likely to cause obstructive symptoms like dysuria and urinary retention [8,9].

Perforate syringoceles are easily identified on urethrography as diverticula communicating with the bulbar urethra, as seen in our case. Imperforate syringoceles appear as eccentric masses impressing on the urethra, usually with smooth margins. Syringoceles can be confused with urethral diverticula, partial urethral duplications, or ectopic ureters and must be differentiated from periurethral lesions such as abscesses and benign or malignant urethral tumors [4,8].

Various radiological procedures, both noninvasive and invasive, are used to diagnose Cowper's gland syringocele. Ultrasound can sometimes visualize "closed" cystic lesions in the anatomical region of Cowper's gland ducts, while urethrosonography is used for "open" syringoceles [2]. Retrograde and antegrade urethrograms/VCUG are considered gold standards for confirming the diagnosis. Additional diagnostic tools include cystourethroscopy, urodynamic studies, computed tomography (CT), and Magnetic Resonance Imaging (MRI) [9].

MRI is particularly useful due to its superior soft tissue resolution, allowing precise definition of the cyst's anatomical location, size, and extent, including the delineation of the cyst wall, septae, and contents [10]. It also aids in detecting complications such as secondary infections, as in our case. To date, there is only one other reported case of an adult imperforate Cowper's syringocele diagnosed by MRI [11], making our case the first diagnosed by this modality.

Asymptomatic syringoceles are often managed conservatively, while symptomatic cases frequently require surgical intervention [4]. Endoscopic unroofing of the cyst has become the preferred treatment for both open and closed types. In cases where endoscopic unroofing fails, open procedures such as transperineal ligation of Cowper's duct or open excision of the cyst

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and urethral repair may be necessary, especially when the syringocele presents as a large perineal mass, as in our case [12].

SUMMARY

Inclusion in Differential Diagnosis

Cowper's duct syringocele should be considered in the differential diagnosis for adults presenting with voiding dysfunction and perineal swelling. MRI is highly effective in delineating and characterizing soft tissues due to its high resolution and reproducibility, aiding in accurate diagnosis.

Prevalence and Symptoms

Cowper's syringocele in adults may be more prevalent than currently recognized. It should be suspected in young patients with lower urinary tract symptoms, particularly those with normal uroflowmetry who experience post-void dribbling.

Treatment and Awareness

Given its potential prevalence, urologists should consider Cowper's syringocele in young male patients with persistent lower urinary tract symptoms and post-void dribbling. The condition is easily treatable, often with simple and effective transurethral marsupialization.

Conflict of Interests

Authors do not have any conflict of interests.

References

1. Shuysky Y., Cowper′s syringocele as cause of low urinary tract symptoms in a young man, *Ugeskrift for Laeger*. (2014) 176, no. 36.

2. Kumar J., Kumar A., Babu N., Gautam G., and Seth A., Cowper′s syringocele in an adult, *Abdominal Imaging*. (2007) 32, no. 3, 428–430, https://doi.org/10.1007/s00261-006-9032-0, 2-s2.0-34447505924.

3. Masuda N., Mishina M., Kitamura Y., Manabe Y., Sakura Y., Itoh H., and Okuno H., A case report of Cowper′s syringocele in an adult treated with transurethral unroofing, *Hinyokika Kiyo*. (2012) 58, no. 7, 355–359.

4. Massion J. C., Shhler A., and Garbay B., Cowper′s canals and glands. Patlogcal manifestations and radiologic aspects, *Journal d′Urologie et de Nephrologie (Paris)*. (1979) 85, 497–511.

5. Moormann J. G., Diseases of the bulbourethral gland (Cowper) in men, *Der Urologe A*. (1998) 37, no. 4, 401–409, https://doi.org/10.1007/s001200050198.

6. Bevers R. F. M., Abbekerk E. M., and Boon T. A., Cowper′s syringocele: symptoms, classification and treatment of an unappreciated problem, *Journal of Urology*. (2000) 163, no. 3, 782–784, https://doi.org/10.1016/s0022-5347(05)67803-2, 2-s2.0-0033954032.

7. Watson R. A., Lassoff M. A., Sawczuk I. S., and Thame C., Syringocele of cowper′s gland duct: an increasingly common rarity, *Journal of Urology*. (2007) 178, no. 1, https://doi.org/10.1016/j.juro.2007.03.155, 2-s2.0-34250188849.

8. Maizels M., Stephens F. D., King L. R., and Firlit C. F., Cowper′s syringocele: a classification of Cowper′s gland duct based upon clinical characteristics of 8 boys, *The Journal of Urology*. (1983) 129, 111–114.

9. Melquist J., Sharma V., Sciullo D., McCaffrey H., and Khan S. A., Current diagnosis and management of syringocele: a review, *International Braz J Urol*. (2010) 36, no. 1, 3–9, https://doi.org/10.1590/s1677-55382010000100002, 2-s2.0-77953883696.

10. Kickuth R., Laufer U., Pannek J., Kirchner T. H., Herbe E., and Kirchner J., Cowper's syringocele: diagnosis based on MRI findings, *Pediatric Radiology*. (2002) 32, no. 1, 56–58, https://doi.org/10.1007/s00247-001-0580-8, 2-s2.0-0036941561.

11. Selli C., Nesi G., Pellegrini G., Bartoletti R., Travaglini F., and Rizzo M., Cowper's gland duct cyst in an adult male: radiological and clinical aspects, *Scandinavian Journal of Urology and Nephrology*. (1997) 31, no. 3, 313–315, https://doi.org/10.3109/00365599709070358, 2-s2.0-0030788740.

12. Redman J. F. and Rountree G. A., Pronounced dilatation of Cowper's gland duct manifest as a perineal mass: a recommendation for management, *The Journal of Urology*. (1988) 139, no. 1, 87–88, 2-s2.0-0023901321.

URL: http://dx.doi.org/10.14738/bjhr.1106.17943.