Prostatic-type polyp located in the bladder of an adolescent: A case report and overview

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Abstract
Prostatic-type polyps are uncommon lesions in the urinary tract. They are sometimes found in the lower urinary tract, particularly on the posterior urethra, but are rarely found in the bladder. We report a case of 15-year-old boy who presented with dysuria. Routine ultrasonography showed a mass in the bladder arising near the internal orifice of urethra. Further inspection with cystoscopy followed by transurethral resection and pathology confirmed the lesion to be a prostatic-type polyp. An overview of other similar case studies showed that the pathogenesis of this condition is controversial, haematuria and dysuria are common clinical symptoms and endoscopic transurethral resection is the best treatment option. Since the polyp is benign, recurrence and progression of this disorder is unlikely to occur.

Keywords
Prostatic-type polyp, bladder, ectopic prostatic tissue

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Introduction
Prostatic-type epithelial polyps are unusual, benign lesions found in the urinary tract system.¹ The lesions were first described approximately 100 years ago² and are known by several synonyms including aberrant prostatic tissue, adenomatous polyps, benign villous polyps of the urethra and papillary adenoma of prostatic urethra.³ Most commonly, the polyps grow on the posterior urethra and are seldomly found...
in the bladder.\textsuperscript{4} We report here on a case of a 15-year-old adolescent boy who presented with dysuria. Imaging and pathology studies confirmed the presence of a polypoid lesion in the bladder arising at the internal orifice of urethra. The lesion was confirmed to be a prostatic-type polyp. Other similar case reports were identified and commonalities discussed.

**Case report**

The patient was a 15-year-old adolescent boy who presented to our institution with a six-month history of dysuria. The patient complained of voiding difficulties which had progressively worsened and medical history showed no obvious causes. Initially, the patient’s main symptoms were sudden interruption on urination and prolonged micturition time and no haematuria or dysuria. The patient underwent routine examinations at the hospital. Ultrasonography showed the presence of a mass in the bladder arising near the internal orifice of urethra, 1.4 cm × 1.3 cm in size with clearly defined boundaries. Doppler ultrasound delineated the blood flow inside the tumour. Cystoscopy confirmed a large mass at the bladder neck at the 1 o’clock position attached with a broad pedicle (Figure 1).

The patient had no history of smoking or previous exposure to toxic chemicals or drugs and no family history of cancer. In addition, his physical examination was unremarkable. Transurethral resection was performed successfully; there were no post-operative complications and the voiding dysfunction abated. Pathology of the mass showed polypoidal lesions of a papillary structure covering most of the prostatic ductal epithelium (Figure 2a). Immunohistochemical staining was positive for prostate specific antigen (PSA) and confirmed that the mass originated from the prostate and not from the bladder (Figure 2b).

**Figure 1.** Cystoscopy results showed a spherical mass with a broad pedicle at the bladder neck.

**Figure 2.** (a) Histological examination showing fibrovascular core covered by a prostatic type epithelium (HE stain, 100X) (b) Positive staining of the epithelium for prostate specific antigen (HE stain, 100X).
Table 1. Overview of case reports of prostatic-type polyps located in the bladder.

| Author/Year               | No. | Age (years) | Site                                  | Presentation                      | Procedure               | Recurrence |
|---------------------------|-----|-------------|---------------------------------------|-----------------------------------|-------------------------|------------|
| Chan et al, 1987          | 10  | 39-71       | Trigone*3                             | Haematuria*8                      | na                      | na         |
|                           |     |             | Neck*4                                | Dysuria*2                         |                         |            |
|                           |     |             | Body*3                                |                                   |                         |            |
| Rubin et al, 1981         | 1   | 26          | Trigone                               | Haematuria                        | na                      | na         |
| Klein & Rosenberg, 1984   | 1   | 20          | Trigone                               | Haematuria                        | na                      | na         |
| Lubin et al, 1984         | 1   | 46          | Trigone                               | Asymptomatic                      | na                      | na         |
| Remick & Kumar, 1984      | 4   | 43-67       | Trigone*3                             | Dysuria*1                         | Biopsy                  | na         |
|                           |     |             | Left ureteral orifice*1               | Haematuria*1                      |                         |            |
|                           |     |             | Asymptomatic*2                        | na                                |                         |            |
| Sánchez et al, 1989       | 1   | 59          | Neck                                  | N/A                               | na                      | Yes        |
| Hansen et al, 1989        | 1   | 73          | Left lateral wall                     | Haematuria                        | Transurethral resection| No         |
| Morey et al, 1989         | 1   | 71          | Bladder dome                          | Haematuria                        | na                      | na         |
| Ishikawa et al, 1990      | 1   | 58          | Trigone                               | Haematuria                        | Transurethral resection| na         |
| Richter et al, 1991       | 1   | 76          | Trigone                               | Dysuria and frequency             | na                      |            |
| Yajima et al, 1993        | 1   | 55          | Inter-ureteric ridge                  | Haematuria                        | na                      | na         |
| Anjum et al, 1997         | 2   | 21 & 40     | Trigone                               | Haematuria*1                      | Resection/fulguration   | na         |
|                           |     |             |                                       |                                   |                         |            |
| Yamamoto et al, 2001      | 1   | 35          | Trigone                               | Asymptomatic                      | Transurethral resection| na         |
| Sánchez Merino et al, 2002| 1   | 58          | Trigone                               | Asymptomatic                      | na                      | No         |
| Dogra et al, 2002         | 1   | 25          | Left posterolateral wall              | Haematuria                        | Transurethral resection| No         |
| Kumamoto & Ota, 2004      | 1   | 73          | Bladder                               | Asymptomatic                      | Transurethral resection| na         |
| Bellezza et al, 2005      | 3   | 45-79       | Left urethral orifice*1               | Haematuria*2                      | Transurethral resection| No         |
|                           |     |             | Right lateral wall*1                  | Asymptomatic*1                    |                         |            |
|                           |     |             | Trigone*1                             |                                   |                         |            |
| Oki et al, 2007           | 1   | 50          | Verumontanum and trigone              | Dysuria                           | Biopsy and transurethral coagulation| na         |
| Eren et al, 2008          | 1   | 24          | Trigone                               | Dysuria and voiding frequency     | Transurethral resection| No         |
| Kim et al, 2013           | 1   | 72          | Bladder dome                          | Haematuria and dysuria            | Transurethral resection| No         |
| Ko et al, 2013            | 1   | 58          | Trigone                               | Urinary frequency                 | Transurethral resection| No         |
| Haroon & Uddin, 2014      | 2   | 47 & 52     | Trigone                               | Haematuria and Urgency            | Transurethral resection| No         |

na: data not available
The patient attends routine follow-up every three months and the most recent examinations show that he is recurrence-free, 18 months post-surgery. Written informed consent was obtained from the patient before publication of his medical record.

Discussion

Although the morphological and histopathological features of prostatic-type polyps have been defined, the histogenesis remains controversial and may vary according to the site of the polyp. Several unsubstantiated hypotheses have been proposed to explain their development and include, activation of embryonal cell nests, excessive hyperplasia of prostatic-type epithelium and metaplasia. While some reports suggest that the condition affects all age groups, others have found that the lesions are common in elderly patients with benign prostatic hyperplasia.

Based on the size and location of the lesion, this disease may present a variety of clinical symptoms. From a review of 22 other case reports (Table 1), the most common site of prostatic-type polyps in the bladder was the trigone and the most frequent presenting symptoms were haematuria and dysuria. Interestingly, in several cases, the condition was asymptomatic. Radiologic imaging and cystoscopy were commonly used to detect the disease and the lesion usually presented as an isoechoic mass on ultrasound. On cystoscopy, the polyp may present as a villous, papillary or frond-like mass which can be easily misdiagnosed as transitional cell carcinoma. Pathology analysis of the resected specimen combined with immunohistochemical staining for PSA are the gold standard procedures to confirm a final diagnosis. Importantly, prostatic-type polyps in the urethra have to be carefully differentiated from prostatic ductal carcinoma which usually presents with nuclear atypia microscopically and often has a high proliferative index; Ki-67 protein is a useful diagnostic tool for this differential analysis.

From our overview of the literature, it appears that endoscopic transurethral resection is the most commonly used treatment option for prostatic-type polyps. Fulguration was used in only one of the 22 studies but it is an alternative treatment approach, as is partial cystectomy in certain situations. Since most of the prostatic-type epithelial polyps of the urinary tract are benign, the condition shows good prognosis. Although, investigations into the progression of prostate-type polyps into adenocarcinoma are limited, it appears that recurrence and progression of the disease are unlikely. A limitation of this case report is that because the condition is rare, we were only able to study one patient. More data collection is needed for further studies.

In conclusion, among adolescent patients with suspected bladder cancer, prostatic-type polyposis should be included within the differential diagnosis. Endoscopic transurethral resection is effective in establishing the diagnosis and treatment of the condition and there appears to be good prognosis.

Declaration of conflicting interest

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