



# One rare case of posterior urethral hemangioma and review of the literature

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## ABSTRACT

Urethral Hemangioma is a rare disease in urology. In one male patient with post-ejaculatory hematuria, a series of ancillary tests performed before surgery did not reveal the cause of the hematuria. It was found to be posterior urethral cavernous hemangiomas on intraoperative microscopy and was operated on endoscopically to relieve symptoms. Therefore, Hematuria after ejaculation may be a posterior urethral cavernous hemangioma bleeding and requires the attention of a urologist.

## 1. Introduction

Urethral Hemangioma is a rare disease in urology and was rarely reported in the literature. One patient was admitted to our hospital with seminal vesiculitis and hematuria, treated surgically.

## 2. Case report

A 36-year-old male was admitted to our hospital for more than five years with recurrent post-ejaculatory hematuria. Examination of the abdomen and external genitalia was normal. Urine routine suggested: erythrocyte count 32.6/μL, epithelial cell count 1.7/μL. No significant abnormalities were found on the urological ultrasound and pelvic MR scan. The cause of the hematuria could not be determined, so urethral cystoscopy was performed under lumbar anesthesia, and intraoperatively it was seen that a raised trapezoid hemangioma was visible in the 5–7 o'clock direction of the urethral membrane with blood leakage (Fig. 1), so the lesion was excised by plasma electrodes and sent for pathological examination (Fig. 2). The urethral catheter was retained and removed after one week, and the patient did not complain of post-ejaculatory hematuria for one year of follow-up.

## 3. Discussion

Urethral Hemangioma is a rare disease that was first reported in 1895.<sup>1</sup> As of 2021, the number of reported cases is about 100, and a male-to-female ratio of about 9:1 has been reported in the literature. Urethral hemangiomas are usually congenital and develop from the

embryonic remnants of unipotent angioblasts that have not developed into normal vessels. The disease is mainly presented with hematuria, which is highly misdiagnosed and overlooked because of the numerous diseases associated with this symptom. The growth of angiomas is limited because of the tissue of the urethral corpus cavernosum semi-encapsulated around the glans and corpus cavernosum of the penis and the relative depth of the penis.<sup>2</sup> Urethral Hemangioma usually has no obvious clinical manifestations. However, if it breaks through to the urethra, symptoms become apparent after erection or after ejaculation, making sarcoid hematuria the most important clinical feature of this disease.<sup>3</sup> Combined with previous reports in the literature, the age of onset of this disease is between 0 and 73 years. In male patients, there is a predominance of young adults. Depending on the location of the Hemangioma, patients may present to the clinic with blood dripping from the urethra after erection or hematuria after ejaculation, such as the two patients in this report. Young men are more sexually active, so the disease is highly detectable but needs to be differentiated from vesiculitis.<sup>2</sup> In female patients, it is more often seen with the finding of urethral masses or vaginal bleeding.

Adjunctive examinations such as urological ultrasound and pelvic MRI are routinely completed in all patients. In Fang Yong et al. for pelvic MRI, preoperative penile sagittal MRI showed a high signal in the urethral cavernosa anterior to the penis.<sup>2</sup> Therefore, penile MRI helps determine the extent of Hemangioma to facilitate the surgeon to develop a surgical plan and have a regular assessment of the treatment outcome. In this report, a pelvic MR plain scan was performed in patient, however, no hemangioma was found in either case, which may be related to the location and the size of the lesion.

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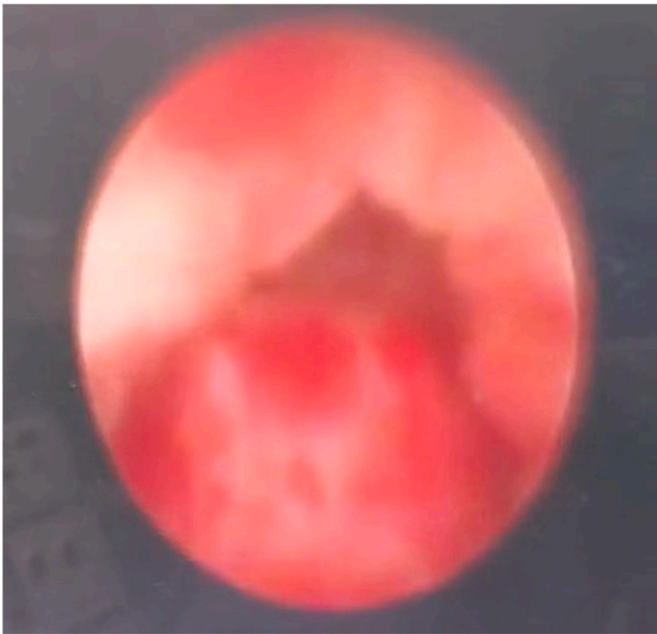


Fig. 1. Cystoscopic posterior urethral Hemangioma.

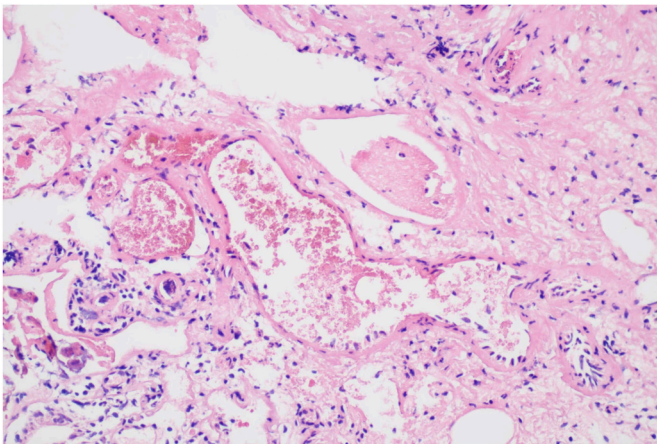


Fig. 2. Pathological examination results showing cavernous Hemangioma.

Cystoscopy is an essential test for the diagnosis of this disease. Cystoscopy may reveal filled vessels in the urethra or fresh blood leakage, all of which are helpful in the diagnosis of this disease and the determination of treatment options. However, when performing cystoscopy, it is essential to note that if a patient with hematuria does not see any apparent abnormalities or neoplasia in the bladder, no blood spurting from the ureteral openings bilaterally. However, the patient still complains of recurrent hematuria, and then total urethroscopy is more critical than ever. Cattolica et al. suggested that cystoscopy in the flaccid penis may miss these lesions that these lesions become more prominent and more visible during erection.<sup>4</sup>

According to previous literature, transurethral hemangioma electrodesis or laser treatment is an effective means of simple approach,

complete treatment, few complications, and less likely to recur after surgery.

The issue of postoperative indwelling urinary catheters also needs to be further discussed. In the literature, the duration of indwelling urinary catheter ranged from 48 h to 7 days or even longer depending on the surgical procedure, and there was no uniformity in the duration of an indwelling urinary catheter, which was 2-days in this case. Long indwelling time is a significant risk factor for urethral stricture after electrodesiccation of the prostate.<sup>5</sup> Therefore, to avoid urethral stricture after electrodesiccation, the indwelling time should be controlled. Long-term postoperative follow-up is still needed in this case to focus on urethral stricture.

#### 4. Conclusion

Posterior urethral cavernous hemangioma is a benign disease with good prognosis and low recurrence rate as long as the diagnosis is timely and the treatment is correct. However, it often occurs after erection or ejaculation and is easily ignored; the attention of urologists is needed.

#### Statement of ethics

Written informed consent was obtained from participants for publication of this case and any accompanying images. This study protocol was reviewed and approved by RESEARCH PROJECT ETHICAL REVIEW APPLICATION FORM, SUINING CENTRAL HOSPITAL, approval number LLSLH20210092.

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#### Author contributions

Xin Qian collected and wrote this case; Xing Tao, Can Ran, and Yangyang Gong offered the main help. Hongjian Liu offered Figs. 1 and 2. Hongjian Liu and Yougang Feng revised and reviewed the manuscript.

#### Data availability statement

All data generated or analysed during this study are included in this article. Further enquiries can be directed to the corresponding author.

#### Declaration of competing interest

The authors report no conflicts of interest.

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