



## A rare case of urethral hemangioma treated with LASER

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### ABSTRACT

Hemangiomas are benign vascular lesion, most commonly seen in liver and skin. Urethral hemangiomas are very rare benign vascular tumors with varying size and usually present as urethral bleeding or hematuria. We are presenting a 64 years old male, who was admitted to our Urology Department with symptoms of intermittent urethral bleeding for 6 months. We performed flexible cystoscopy under general anesthesia and a single hemangiomatous lesion of 7 mm in diameter located in the navicular fossa was found. The SIRIUS 60W Thulium Fiber Laser for removing the lesion was used.

### 1. Introduction

Hemangiomas are benign vascular lesion, most commonly seen in liver and skin. Urethral hemangiomas are very rare benign vascular tumors with varying size and usually present as urethral bleeding or hematuria. On histology they consist of thin walled vascular spaces lined by endothelial cells and their origin still remains unknown. It has been suggested they originate from unipotent angioblastic cells that fail to develop into normal blood vessels. The most common type is cavernous hemangioma. Treatment may be extremely challenging and ranges from transurethral approach to open reconstructive surgery.

### 2. Case presentation

We are presenting a 64 years old male, who was admitted to our Urology Department with symptoms of intermittent urethral bleeding for 6 months. The patient did not report any voiding symptoms or any kind of urethral trauma. The frequency of urethral bleeding was 4–5 times per week, without any provocation factors and he did not report any hemospermia. The physical examination, vital signs and external genitalia were normal. Midstream urine, semen and urethral cultures were negative. Ultrasound sonography on abdomen and pelvis showed no pathological findings.

We performed flexible cystoscopy under general anesthesia and a single hemangiomatous lesion of 7 mm in diameter located in the navicular fossa was found. The SIRIUS 60W Thulium Fiber Laser for

removing the lesion was used. The laser settings at the beginning of the procedure was 1J–30 Hz for resection and 1J-20 Hz for subsequent coagulation. Indwelling catheter 18 Fr was placed for 24 hours post-operatively. The patient was discharged from the Department on the first postoperative day without any symptoms of bleeding.

The histopathological examination showed a structure consisting of an anastomous network of various-sized vascular spaces upholstered with endothelial cells and filled with blood. The described finding corresponds to a cavernous hemangioma of the urethra (Fig. 1).

The patient was asymptomatic at three months follow up visit and the cystoscopy did not revealed any new lesions.

### 3. Discussion

Hemangiomas are benign vascular tumors that can occur at any age and most cases are described in males and only a few one have been reported in females. The most often locations of their appearance are the skin and the liver. Also, they can grow at all levels of the urinary tract, including kidney, ureter, bladder, prostate and urethra. The urethral localization is very rare.<sup>1,2</sup> In our case we have a hemangioma of the distal part of the urethra in navicular fossa.

Clinical symptoms depend on the location and size of the tumor. The main symptoms are urethral bleeding if the tumor is localized in the anterior urethra and hematuria if the localization is the proximal part of the urethra. Although both of these bleedings can be very intense and can cause anemia. Large lesions may present with obstructive urinary

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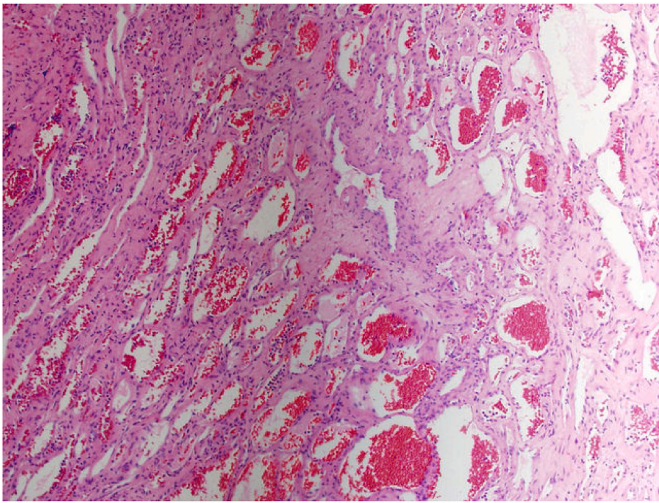
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**Fig. 1.** Histopathology image of urethral hemangioma.

symptoms or protrude through the urethral meatus and can cause urinary retention with blood clots.<sup>3</sup> In our case the main symptom was the intermittent urethral bleeding for 6 months.

The urethroscopy is the most precise method for the diagnosis and has both diagnostic and therapeutic purposes. Indeed, it allows the identification of tumor characteristics, friability, its size, location and number. Moreover it facilitates the selection of therapeutic strategy. The treatment consists of a tumor resection or ablation. Treatment with laser

is one of the successful options and may obviate the need for open and extensive surgery. Hemangiomas treated with KTP, Nd: YAG and holmium laser all reported excellent results. Also selective arterial embolisation in some large tumors has been reported. Electrofulguration has been used in the past but carries the risk of scarring.<sup>4,5</sup> In our case we used the Thulium Fiber Laser with excellent postoperative results.

#### 4. Conclusions

The urethral localization of a hemangioma is rare and its treatment is not yet well established. The use of laser endoscopic treatment seems to be effectively, without secondary stenosis.

#### Declaration of competing interest

The authors declare that they have no competing interests.

#### References

1. Efthimiou I, Kavouras D, Vasilakis P, Katsanis S. Hemangioma of penile urethra-treatment with simple transurethral excision: a case report. *Cases J.* 2009;2:6199.
2. Regragui S, Slaoui A, Karmouni T, El Khader K, Koutani A, Attya AI. Urethral hemangioma: case report and review of the literature. *Pan Afr Med J.* 2016;23:96, 10.11604/pamj.2016.23.96.8700 Published 2016 Mar 15.
3. Lauvetz RW, Malek RS, Husmann DA. Treatment of extensive urethral hemangioma with KTP/532 laser. *Laser Surg Med.* 1996;18:92–95.
4. Khaitan A, Hemal AK. Urethral hemangioma: laser treatment. *Int Urol Nephrol.* 2000; 32:285–286. <https://doi.org/10.1023/A:1007179428592>.
5. De Silva-Gutiérrez Alfonso, Martínez-Méndez María Esther, Romo Marco Aurelio González, et al. Urethral hemangioma: a case report. *Rev Mex Urol.* 2013;73:50–53.