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Histopathology

# VASCULAR RARITY: AN UNUSUAL CASE OF HEMANGIOMA OF THE GLANS PENIS

KEY WORDS:

**Dr. Yoganand Patil** MD(Pathology), Head of Department of Pathology , Jagjivan Ram Hospital - Western Railway, Mumbai - 400008.

**Dr. V. Kalaivanan*** DNB Resident (Pathology) , Jagjivan Ram Hospital - Western Railway, Mumbai - 400008. *Corresponding Author

**Dr. Vaishnavi Ganesan** DNB Resident (Pathology) , Jagjivan Ram Hospital - Western Railway, Mumbai - 400008.

**Dr. Bhavana Kakade** DNB Resident (Pathology) , Jagjivan Ram Hospital - Western Railway, Mumbai - 400008.

**ABSTRACT**

Hemangiomas are benign vascular tumors frequently observed in the skin and mucous membranes, but their presence in the glans penis is extremely uncommon. We report a case of a 38-year-old male who presented to the Urology OPD with a three-month history of swelling and discoloration of the glans penis. Histopathological examination revealed a capillary hemangioma, distinguished by a lobular proliferation of small capillaries. Given its rare location, this condition can easily be misdiagnosed as Peyronie's disease or penile cancer, both of which have significant psychological and treatment-related consequences. Although hemangiomas are benign, their occurrence in this region introduces unique diagnostic and therapeutic challenges. This case highlights the need to consider vascular tumors in the differential diagnosis of penile lesions and adds to the scarce literature on hemangiomas of the glans penis, with a focus on the clinical and histopathological features of this unusual presentation.

## INTRODUCTION

Hemangiomas are benign vascular malformations that are categorized into capillary, cavernous, arteriovenous, venous, and mixed subtypes. Among these, the cavernous and mixed varieties are the most common, typically occurring in the musculoskeletal system, liver, and spleen. Hemangiomas are rarely found in the genital region, comprising only 1–2% of all cases [1] . Reports of hemangiomas specifically affecting the glans penis are extremely limited. The differential diagnosis for painful penile lumps includes conditions such as Peyronie's disease and penile phlebothrombosis [2].

### Case Presentation

A 38-year-old male presented to the Urology OPD with mild swelling and bluish discoloration on the glans penis approximately 3 months ago. Over time, the swelling gradually increased, and the patient experienced on-and-off pain, particularly when the swelling was more prominent. He also reported mild difficulty in urination but no urinary retention or burning. There was no history of trauma, fever, or sexually transmitted infections.

General physical examination is normal. On local examination: A well-defined, soft, non-tender swelling was present on the glans penis, measuring approximately 1.5 cm, with a bluish hue, suggestive of a vascular lesion. No signs of inflammation, ulceration, or discharge were noted. No inguinal lymphadenopathy.

Ultrasonography done revealed a hypoechoic lesion suggestive of a vascular malformation and doppler ultrasound confirmed a low-flow vascular lesion, consistent with a hemangioma. MRI done revealed a vascular lesion confined to the glans penis.

Given the patient's symptoms of pain and difficulty in urination, surgical excision done, and the specimen was sent for histopathological and immunohistochemical analysis.

Histopathological examination showed benign proliferation of lobules and nests of thin-walled, variable-sized capillaries lined by plump endothelial cells, consistent with a capillary hemangioma. The lesion showed strong immunoreactivity for CD31, confirming its vascular origin. The Ki67 proliferation index was low, indicating low mitotic activity, supporting the benign nature of the lesion.

The patient recovered well post-surgery, with no complications. At the 6-month follow-up, there was no recurrence of the lesion, and the patient reported resolution of symptoms. Further follow-up was scheduled to monitor for any recurrence.

## DISCUSSION

Penile tumors are rare, with the most common being carcinoma and condyloma accuminata. However, fibroma, hemangioma, and lymphangioma circumscriptum should also be included in the differential diagnosis of cutaneous lesions on the glans penis [3] .

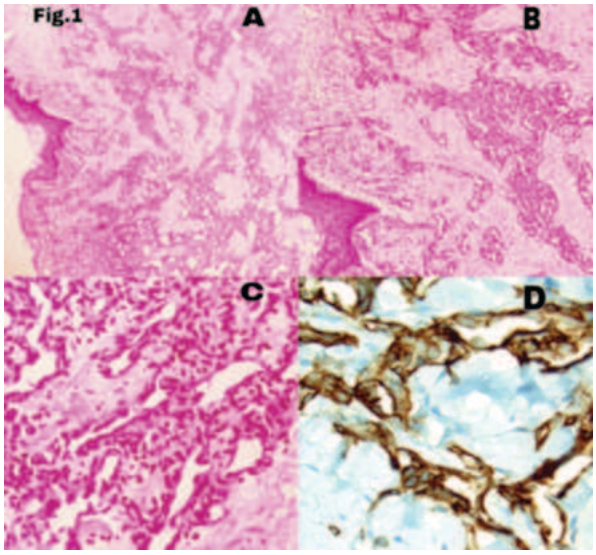
The exact cause of hemangiomas remains unclear, though they are thought to result from abnormal proliferation of endothelial cells in dysplastic vascular channels. While most hemangiomas are congenital vascular anomalies, some suggest they may arise from revascularization of a prior penile hamartoma or develop following trauma [1,2].

The diagnosis of hemangiomas is primarily clinical. In cases like ours, color Doppler ultrasonography may reveal a low-flow state in hemangiomas. While MRI and CT scans do not clearly distinguish between the cavernous body and the angiomatous malformation, cavernosography can be useful in identifying the extent of the lesion within the corpora cavernosa [2].

Urogenital hemangiomas most frequently occur in the kidney and bladder, but have also been reported in the urethra, genital skin, and prostate. Thus, imaging of the urinary tract may be valuable for detecting any associated hemangiomatous lesions [4].

Histopathological examination showed benign proliferation of lobules and nests of thin-walled, variable-sized capillaries lined by plump endothelial cells, consistent with a capillary

hemangioma (Fig1A, B, C - at 4x, 10x and 40x Magnification). The lesion showed strong immunoreactivity for CD31 (Fig1D - Highlights the endothelial cells) , confirming its vascular origin. The Ki67 proliferation index was low, indicating low mitotic activity, supporting the benign nature of the lesion.




Hemangiomas are often monitored if asymptomatic but can be treated with surgical excision for symptomatic cases, laser therapy (including Nd:YAG laser) for superficial lesions, and sclerotherapy for larger ones. Medications like beta-blockers may also be used for extensive or complicated hemangiomas [5].

## CONCLUSION

This case highlights the critical need for accurate diagnosis of painful penile lumps. Clinicians should be aware of penile hemangioma and include it in the differential diagnosis. A comprehensive clinical and radiological assessment is crucial for proper diagnosis. The optimal management approach is local excision followed by regular physical exams to monitor for potential recurrence.

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