

## Hemangioma of Glans Penis: A Case Report and Literature Review

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**1. Abstract**

Hemangioma of urinary system is a rare disease, among which hemangioma of glans penis is an extremely rare vascular malformation. At present, there is no clear guideline for the treatment of glans hemangioma. In this paper, a case of glans hemangioma was treated by injecting sclerosing agent into the lesion, and the related literature was reviewed.

**2. Introduction**

Hemangioma is caused by benign proliferation of mesodermal vascular endothelial cells in any part of the body [1]. It is the most common benign vascular tumor in children [2], but very few hemangiomas occur in urinary system, especially glans penis [3]. At present, the main treatment methods include oral propranolol, topical timolol, surgical resection, sclerotherapy and cryotherapy [4]. Up to now, there is no standard guideline for the treatment of glans hemangioma. This paper reports a case of glans hemangioma treated by injecting sclerosing agent into the lesion.

**3. Case Presentation**

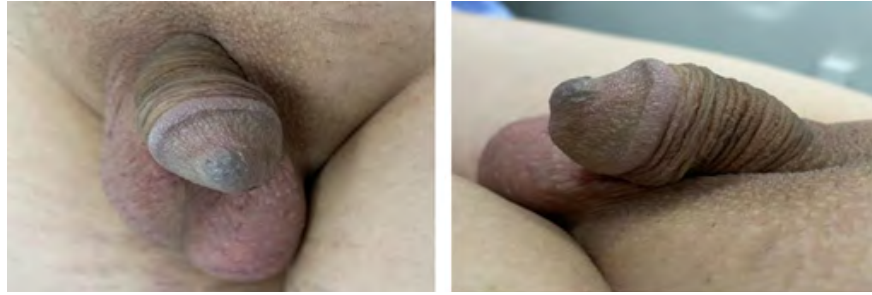
A 30-year-old adult male accidentally discovered a small local tumor on the glans penis 20 years ago, which was about 1\*0.4cm in size, dark purple, soft in texture, painless and without ulceration. Color Doppler ultrasound examination in the external hospital revealed a hypoechoic mass in the glans penis, and hemangioma was

considered. Because hemangioma is easy to bleed, biopsy was not performed.

Take the patient in supine position, disinfect with 0.5% iodophor and spread towel. Lidocaine cream on the glans penis was applied for topical anesthesia, and 1% lidocaine was used for annular block anesthesia at the penis root. Disinfection with iodophor again showed a dark purple hemangioma in the middle of glans penis, about 1\*1cm in size. Prepare sclerosing agent injection (2ml normal saline +8mg pingyangmycin +5mg dexamethasone +2ml 2% lidocaine injection = 5ml liquid in total). About 0.3cm away from the edge of the hemangioma (injection at 3 points: 12 o'clock, 3 o'clock and 9 o'clock) was punctured into the tumor, and the sclerosing agent was slowly injected, with a total injection of 1.6ml. About 5 minutes after injection, the tumor surface was observed to be white. F16 indwelling bladder catheter, apply elastic bandage to compress the glans hemangioma

**3. Result**

After 2 weeks, 1 month and 2 months after operation, the patient underwent outpatient reexamination. It was found that the hemangioma of glans penis gradually became lighter in color from 2 weeks to 1 month after operation, and basically disappeared after 2 months after operation (Figure 1-4).



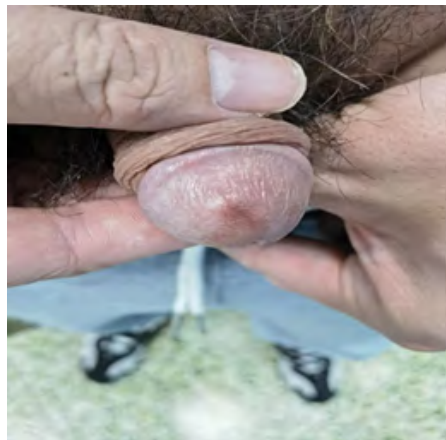
**Figure 1:** Preoperative picture



**Figure 2:** Intraoperative picture



**Figure 3:** One month after operation



**Figure 4:** Two months after operation

#### 4. Discussion

Hemangioma is a common benign hemangioma, which can be classified according to the depth in the skin, the number of lesions and the location in the body [5]. Hemangiomas are usually divided into capillary type, cavernous type, arteriovenous type, venous type and mixed type, among which cavernous type and mixed

type are the most common [6]. Hemangioma in urinary system is a rare disease, which is mainly found in kidney and bladder [7]. Hemangioma of glans penis is extremely rare. At present, the existing treatment methods include oral propranolol, topical timolol, surgical resection, laser therapy, sclerotherapy in lesions and cryotherapy<sup>4</sup>. Propranolol is a first-line drug for the treatment of

complex hemangioma, which has high safety, but it also includes risks such as bradycardia [8]. Its mechanism of action may be to inhibit the expression of VEGF9 and VEGF receptor -2 [10]. Topical timolol is considered to be an effective and safe method to treat hemangioma, but it has the possibility of systemic absorption [11]. Laser therapy for children's hemangioma has few complications and relatively simple operation. It is recommended to treat superficial hemangioma. The main mechanism is to rupture oxygenated red blood cells and block blood vessels [12], which leads to the degeneration and necrosis of endothelial cells of capillaries in hemangioma [13]. For large multiple hemangiomas that are difficult to treat non-surgically, repair and surgical treatment are necessary [14], but postoperative scar is also one of the main complications that patients are worried about [5]. Cryotherapy is mainly the cold-induced coagulation death of benign tumor tissue [15], which has less bleeding, good appearance and minimal patient discomfort [16].

In the case of this article, we chose Pingyangmycin mixed with dexamethasone for intra-focus sclerotherapy. Sclerosis can effectively limit the damage to the tissues around the lesion. Pingyangmycin is a glycopeptide antibiotic, and its most common and effective use is for the treatment of hemangioma [17]. Pingyangmycin affects cell metabolism by inhibiting DNA synthesis [18]. Intralesional injection of Pingyangmycin can quickly inhibit the proliferation of vascular endothelial cells, and the accumulation of local high-concentration drugs can make vascular endothelium or epithelial lining fibrose [19], thus limiting the further progress of hemangioma. Dexamethasone can effectively inhibit the proliferation of endothelial cells and increase the sensitivity of blood vessels to contractile agents, and the combination of the two can play a better synergistic role. Adding lidocaine solution can make patients receive treatment in a painless state.

Although sclerotherapy in lesions is easy to operate and acceptable, there are some side effects, among which the common side effects include fever, local scar, superficial ulcer and hyperpigmentation [20]. In the diagnosis and treatment of this case of glans hemangioma, we controlled the ratio of injected drugs, the injection volume, the position and depth of injection points, and achieved the effect of less side effects.

Fever is the most common adverse reaction after Pingyangmycin injection, which usually occurs 24 hours after injection. In order to reduce the occurrence of fever, we added dexamethasone into the injection. Dexamethasone can not only increase the sensitivity of blood vessels to Pingyangmycin, but also prevent the febrile reaction caused by Pingyangmycin through its anti-inflammatory and immunosuppressive effects. The formation of ulcers and scars may be caused by single injection, which leads to high dose and concentration of one injection, resulting in skin ulcers and scars. For this case of glans hemangioma, we chose multi-point injection (12 o'clock, 3 o'clock, 9 o'clock direction), and pumped back before

injection to see if it was injected into the tumor. Under the premise of ensuring the drug concentration, dose and depth, the ideal effect could be obtained.

## 5. Conclusion

For glans hemangioma, although surgical resection is direct and effective, there may be the risk of bleeding and postoperative scar, which may affect the appearance of glans and even sexual function. Intracavitary sclerotherapy has been successfully applied in a large number of cases. Compared with other treatments, sclerotherapy has less postoperative scar formation and intraoperative bleeding, and the operation is relatively simple and the cost is low. Therefore, in-focus sclerotherapy can be the first choice for superficial hemangioma of glans penis.

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