

Rare malformation of glans penis: Arteriovenous malformation

Y Akin, M Sarac¹, S Yucel²

Department of Urology, Faculty of Medicine, Erzincan University, Erzincan, ¹Pediatric Surgery, Faculty of Medicine, Firat University, Elazig, ²Urology and Pediatric Urology, Faculty of Medicine, Akdeniz University, Antalya, Turkey

Abstract

Pediatric glans penis malformations, especially arteriovenous malformations (AVM), are very rare. Herein, we report two rare cases. A 14-year-old boy attended our outpatient clinic with chief complaints of purple swelling and rapidly growing lesion on the glans penis. The lesion was excised surgically after physical and radiological evaluations. Pathology reported AVM and the patient is being followed up. The second case is a 2-year-old boy who was admitted with a big lesion involving glans penis and genital area that has been present since birth. In physical and radiological evaluations, lesion on the glans penis was pulsatile. Parents of the patient did not want any surgery and patient has been in follow-up. Diagnosis of the vascular lesions on glans penis is very easy by physical and radiological examinations today. Long-term follow-up is very important for AVM. Clinicians must make a careful effort to document new glans lesions in the pediatric population and decrease anxiety in the parents of affected children.

Key words: Arteriovenous malformations, glans penis, penis anomalies

Date of Acceptance: 04-Sep-2012

Introduction

Malformations of the glans penis are very rare in the pediatric group. They are diagnosed at birth or children and/or parents may notice the growing lesions with age. The word malformation is used for developmental pathologies but also may be used for lesions which develop thereafter. Although the malformations on the glans penis are diagnosed by basic physical and radiological examinations, the lesions can pose great concern for the child and parents. This condition lends itself to early diagnosis and treatment in many cases. All of the malformations of the glans penis are benign in childhood. Although there is a possibility for malignant transformation in some lesions, there is no report of malignant transformation thus far. Herein, we report two very rare cases which are arteriovenous malformations (AVM) on glans penis.

Address for correspondence:

Dr. Yigit Akin,
Department of Urology, Faculty of Medicine,
Erzincan University, 24040 Erzincan, Turkey.
E-mail: yigitakin@hotmail.com

Case Reports

Case 1

A 14-year-old male patient and his parents presented at urology outpatient clinic with complaints of a purple-colored lesion on glans penis which is about 1 cm in size; in physical examination, he was circumcised, penile length was normal, testes were well descended and normal. Pubic hairs were seen. All of these findings were compatible with his chronological age. There was superficial and soft consistency lesion which diameter was 1 cm with palpation on glans penis at the level of 12 o'clock [Figure 1a]. The initial diagnosis of the lesion was a vascular malformation. In radiological assessment, the diameter of the superficial vascular lesion was 1 cm and the lesion was 4.1 mm in depth [Figure 1b and c]. The surgical excision was

Access this article online

Quick Response Code:



Website: www.njcponline.com

DOI: 10.4103/1119-3077.113471

PMID: *****

performed and the report of the histopathology was AVM [Figure 1d and e].

Case 2

A 2-year-old male patient and his parents presented to the urology outpatient clinic with complaints of a lesion which has been present since birth on glans penis and also involving the genital area. On physical examination, he was uncircumcised and his penile length and testicles were normal. A pulsatile vascular malformation was on glans penis. In radiological examination, there was an excessive vascularization in lesion and these findings were compatible with AVM [Figure 1f]. The surgical intervention was not recommended for that lesion. Wide excision, laser, and sclerotherapy were described as a recommended treatment options in the future. Additionally, regular follow-up was recommended in outpatient clinic.

Discussion

There are many glans penis malformations that have been described in literature, though there has been no

comprehensive study. Up to now, 142 cases have been reported in the literature.^[1] In those 142 reported cases, cystic lesions were in 62 (44%), vascular malformations were in 34 (24%), dermatological lesions were in 23 (16%), infectious lesions were in 20 (14%), and neurogenic lesions were in 3 (2%) cases.^[1] We would like to report two cases from two different clinics with vascular malformations of glans penis.

Penile vascular lesions including hemangiomas and vascular malformations were divided into two groups by Ramos *et al.*^[2] According to their report, capillary or venous lesions are defined as rapid growth immediately after birth and/or decreasing its size slowly and lesions whose size gradually increased with age are defined as arterial lesions. According to this classification, pyogenic granulomas which are originating from expanded skin capillaries due to chronic irritation were counted instead of hemangiomas. Glomus tumors of the skin that provides thermo-regulation originating from glomus bodies were counted instead of a fast-flow vascular malformation.

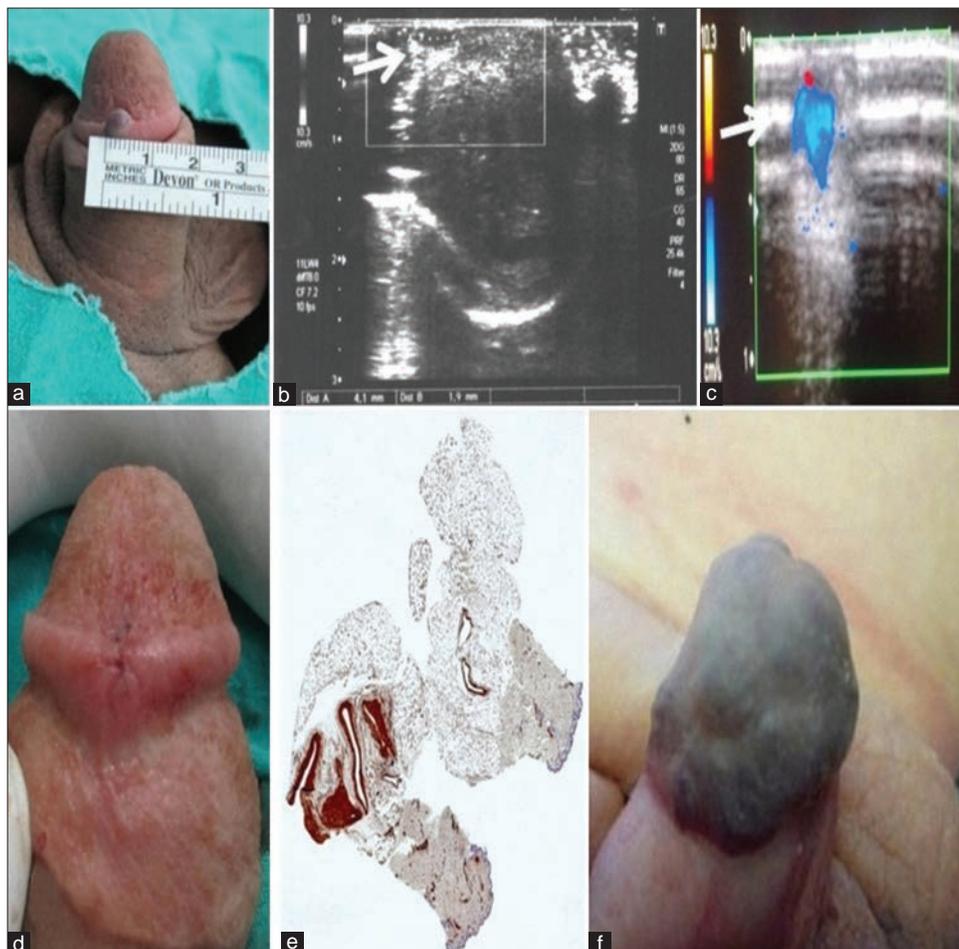


Figure 1: (a) Macroscopic view of arteriovenous malformation on glans penis, 1 cm in size. (b) In gray scale ultrasound, lesion located on glans penis is anechoic. (c) In colored Doppler ultrasound, origin of lesion is vascular and vascular discoloration can be observed. (d) After surgical excision of lesion. (e) In histopathology, vascular cells connect each other with mature epithelial cells and venous dilatation with arterial hypertrophy is observed. (f) Vascular malformation on glans penis was pulsatile in physical and radiological examinations

Additionally, our cases were AVM according to vascular classification of Ramos *et al.*^[2]

Diagnosis of vascular lesion depends on physical, radiological, and also advanced radiological examinations. Physical and basic radiological examinations are very easy to perform and to access today. Sometimes, advanced radiological examinations may be needed such as angiography.^[3] Additionally sclerotherapy can be performed at the same time with vascular angiography. Features of our two cases were pronounced in physical and radiological examinations. These lesions were superficial and soft in consistency and were diagnosed easily in ultrasonography.

Regarding differential diagnosis, these lesions may be confused with other vascular malformations especially hemangiomas. However, hemangiomas of glans penis primarily occur during childhood and they may appear hyperechoic or hypoechoic depending upon the content of the lesion (such as septa, blood-containing units) in ultrasonography. Color Doppler may demonstrate blood flow within these lesions but the absence of flow does not rule out the presence of these lesions.^[4] Selective arteriography may detect the lesions, but it is of little importance for diagnosis. In addition, it reveals normal results in most patients because of the presence of thrombosis in dilated vascular spaces within the hemangioma. Recently, it has been suggested that radionuclide studies, particularly Tc-99 scans, may play a role in the assessment of the extension of these lesions.^[5] However, treatments may be needed when patients suffer from pain, ulceration, heaviness, and bleeding. The treatment options for hemangiomas are same with AVM.^[6]

All of the vascular lesions on glans penis in childhood are benign. Treatment depends on request of patients or their parents. Neodymium laser, sclerotherapy, or surgical excisions are the treatment options for those malformations.^[7] Usually, they do not recur if the excision is adequate except for glomus tumors. A follow-up algorithm for those vascular malformations has not been reported yet.^[8] The treatment options can be managed easily according to radiological reports. In this report, we present a case that had surgical excision for AVM and in follow-up period now. The other patient who received no treatment is also being followed up.

Conclusion

We evaluated two childhood vascular malformations of the glans penis in the light of current literature. We did not investigate all of the dermatological lesions of the glans penis in childhood. Physical and basic radiological examinations are important and sufficient for diagnosis and differential diagnosis for vascular malformations on glans penis mostly. All of the cases including our cases in the literature are benign. Simple surgical excision, sclerotherapy, or laser can be performed for histopathological diagnosis and treatment of them. Our treatment, cosmetic results, and follow-up were excellent such as all cases that were reported in literature. In addition, there are very few cases with the risk of malignant transformation reported in the literature; so long-term follow-up as well as diagnosis and treatment are very important.^[9] With development of diagnostic technology and improving economies, more cases will be added to literature. Clinicians should make an effort to improve their clinical diagnostic skill to reduce concerns of the parents and children.

References

1. Papali AC, Alpert SA, Edmondson JD, Maizels M, Yerkes E, Hagerty J, et al. A review of pediatric glans malformations: A handy clinical reference. *J Urol* 2008;180:1737-42.
2. Ramos LM, Pavón EM, Barrilero AE. Venous malformation of the glans penis: Efficacy of treatment with neodymium: Yttrium-aluminum-garnet laser. *Urology* 1999;53:779-83.
3. Gokalp A, Tahmaz L, Sağlam M, Kibar Y, Dayanc M, Özgök Y, et al. Arteriovenous malformation of the glans penis. *BJU Int* 2000;85:374.
4. Yeoman LJ, Shaw D. Computerized tomography appearances of pelvic haemangioma involving the large bowel in childhood. *Pediatr Radiol* 1989;19:414-6.
5. Hervías D, Turrión JP, Herrera M, Navajas León J, Pajares Villarroya R, Manceñido N, et al. Diffuse cavernous hemangioma of the rectum: An atypical cause of rectal bleeding. *Rev Esp Enferm Dig* 2004;96:346-52.
6. Kumar A, Goyal NK, Trivedi S, Dwivedi US, Singh PB. Primary cavernous hemangioma of the glans penis: Rare case report with a review of the literature. *Aesthetic Plast Surg* 2008;32:386-8.
7. Yildirim I, Irkilata C, Sumer F, Aydur E, Özcan A, Dayanc M. Fibroepithelial polyp originating from the glans penis in a child. *Int J Urol* 2004;11:187-8.
8. Saito T. Glomus tumor of the penis. *Int J Urol* 2000;7:115.
9. Barbagli G, Palminteri E, Mirri F, Guazzoni G, Turini D, Lazzeri M. Penile carcinoma in patients with genital lichen sclerosis: A multicenter survey. *J Urol* 2006;175:1359-63.

How to cite this article: Akin Y, Sarac M, Yucel S. Rare malformation of glans penis: Arteriovenous malformation. *Niger J Clin Pract* 2013;16:389-91.

Source of Support: Nil, **Conflict of Interest:** None declared.