

# Journal of Nephropathology



## Large pyogenic granuloma on the scrotum; a case report

Farshad Gholipour<sup>1</sup>, Davoud Gharakhani<sup>1</sup>, Mohammad Reza Hajian<sup>2\*</sup>

<sup>1</sup>Isfahan Kidney Disease Research Center, Isfahan University of Medical Sciences, Isfahan, Iran

<sup>2</sup>Nickan Research Institute, Isfahan, Iran

### ARTICLE INFO

**Article type:**  
Case Report

**Article history:**  
Received: 13 November 2022  
Accepted: 19 January 2023  
Published online: 9 February 2023

**Keywords:**  
Pyogenic granuloma  
Scrotum  
Neoplasms

### ABSTRACT

**Background:** Pyogenic granuloma (PG) is a common benign vascular lesion of the skin and mucosa, which happens following different stimuli. Although the common sites for PG are the face, oral cavity, upper trunk and digits, here we report a rare case of large PG on the scrotum.

**Case Presentation:** On 12 January 2021, a 14-year-old Caucasian boy came to the urology clinic of Alzahra hospital, Isfahan, Iran with a large pink lesion on the left hemi-scrotum, which has been gradually enlarged for the past four months with rapid growth in the last three weeks becoming 4 cm in diameter. We resected the lesion using microscopic surgery and the findings in the histopathological study were consistent with PG.

**Conclusion:** Here we reported a rare case of teenage Caucasian boy with large PG on the scrotum for the first time. Although this lesion is rare, urologists should be familiar with it.

### Implication for health policy/practice/research/medical education:

Pyogenic granuloma (PG) is a common benign vascular lesion of the skin and mucosa, which happens in reaction to different stimuli. Scrotal PG is a rare condition and only two cases have been ever reported. Urologists must be familiar with the lesion as they are the specialists who encounter genital complaints the most.

**Please cite this paper as:** Gholipour F, Gharakhani D, Hajian MR. Large pyogenic granuloma on the scrotum; a case report. J Nephropathol. 2023;x(x):e21420. DOI: 10.34172/jnp.2023.21420.

### Background

Pyogenic granuloma (PG) was first introduced in 1897 as *Botryomycosis Humaine* because it resembles the berry-shaped lesions of horses' scrotum caused by a fungal infection and then was renamed as PG (1). Despite what the name might suggest, the disease is neither infectious nor granulomatous and based on histological studies. Therefore, the preferred name is lobular capillary hemangioma (2). To better defining, it is a common benign vascular lesion consisting of capillary proliferation that develops rapidly in reaction to various stimuli. The etiology is not fully understood there are some predisposing factors such as trauma, hormonal influences, bacterial and viral infections, or drugs. Children and young people are particularly vulnerable to the illness. Preferred sites for the lesion are the face, oral cavity, upper trunk and digits, while it has also been reported in less common sites such as the central nervous system and bladder (3).

The lesion is very rare and to date, only two cases of scrotal PG have been reported in the literature (4, 5). The

urologists who are the main referring specialists for genital problems are not familiar with this lesion. In the previous cases, a small lesion was reported and both of the patients were adults. However, the scrotal type of this lesion has not been reported in a young boy. In this study, we report a rapidly growing scrotal lesion in a 14-year-old Caucasian boy in whom final pathology revealed PG.

### Case Presentation

On 12<sup>th</sup> of January 2021, a 14-year-old Caucasian boy came to the urology clinic of Alzahra hospital, Isfahan, Iran with a complaint of pink lesion on the anterior surface of the left hemi-scrotum for the past four months. Past-medical and surgical histories were unremarkable. The lesion size gradually increased and intensified at the last three weeks and became 38×35×22 mm in size. The lesion was lumpy and pedunculated, without burning, itching, or bleeding and had a foul-smelling watery discharge (Figure 1). The patient had no history of trauma, sexual contact, or were not drug therapy and there were no other

\*Corresponding author: Mohammad Reza Hajian,  
Email: mr1994.hajian@gmail.com m.r.hajian@res.mui.ac.ir



**Figure 1.** A 4-cm pedunculated pink mass with foul-smelling watery discharge is shown on the left hemiscrotum of 14-year-old boy.

positive findings in physical examination.

We resected the lesion microscopically with a margin of 5 mm. The specimen was sent for histopathological evaluation. The day after the surgery, patient was discharged. The pathology study, showed a vascular proliferation with a lobular view which was embedded within inflammatory cells and covered by a thin layer of squamous epithelium (Figure 2). The findings in the histopathological study were consistent with that of PG. No recurrence was observed during the 12-month follow-up.

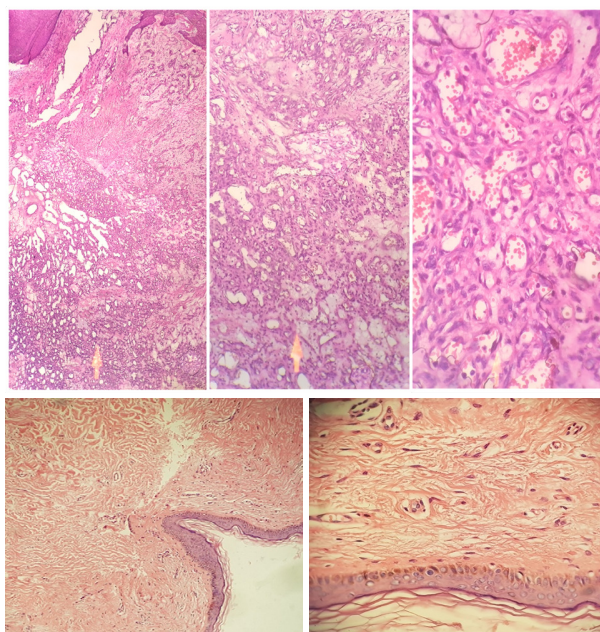
## Discussion

Pyogenic granuloma is a benign, rapidly growing, vascular, inflammatory skin mass that occurs more frequently in newborns and children. Although the most common sites for PG are the face, oral cavity, upper trunk and digits, it can rarely occur on the scrotum. Therefore, it is unfamiliar for urologists. In this study, we presented a case of large scrotal PG.

To date, only two cases of scrotal PG have been reported. The first case was a 36-year-old and the second case was a 33-year-old male (4,5). In both cases, a small lesion was described and the patients were adults. However, we reported a larger lesion in a teenage boy for the first time.

The definite pathogenesis of PG is not well recognized. Some factors seem to be related to this condition, including trauma, staphylococcus infection, viral oncogenesis, or hormones. Moreover, some drugs like 5-fluorouracil (5-FU), capecitabine, anti-retroviral agents, and retinoids were linked as well (6-9). Frequently there is no identifiable cause as in our case. However, Abdul Gaffoor found a history of scrotal trauma as the causative factor in their case (4).

Clinically, PG presents as a solitary, pedunculated, polypoid, red, purple, or yellowish papule or nodule arising from normal skin with varying sizes from a few millimeters to several centimeters. Our patient had the lesion appeared as a small mass for the past four months with rapid growth in the last three weeks. That made our



**Figure 2.** Pathologic image showing vascular proliferation with a lobular view, which was embedded within inflammatory cells and covered by a thin layer of squamous epithelium (pyogenic granuloma).

case the largest scrotal PG ever reported.

These lesions could be eroded and lead to recurrent bleeding; however, our patient did not complain of bleeding possibly due to lack of trauma induced by sexual contact. The differential diagnosis for PG includes wart, glomus tumor, hemangiomas, epithelial cell nevi, basal cell carcinoma, squamous cell carcinoma, nodular amelanotic melanoma and Kaposi sarcoma. Although the diagnosis is clinical and histopathology is only required in doubtful cases, surgery will be needed for a definitive diagnosis especially for urologists who rarely encounter such a lesion.

In the microscopic study, the lesion comprises exuberant granulation tissue, which is covered by a thin layer of epithelium that may be embedded within a myxoid stroma with a mixed cellular infiltrate consisting of fibroblasts, lymphocytes, mast cells and occasionally neutrophils. The presence of multiple dilated vascular channels lined with a single layer of the endothelium in the papillary and upper reticular dermis is characteristic of the lesion.

Although microscopic removal of the tumor is the most effective treatment to prevent recurrence, curettage and cautery, cryotherapy, shave excision, excision with primary closure, laser therapy and topical agents like topical imiquimod, alitretinoin gel, or beta-adrenergic receptor antagonists are other options for treatment (10).

## Conclusion

Here we reported a rare case of teenage Caucasian boy with large PG on the scrotum for the first time. The lesion

was large and rapidly growing that underwent surgical resection. To date, only two cases of scrotal PG have been reported in literature. Although this lesion is rare, urologists should be familiar with it.

#### Authors' contribution

Conceptualization: FG and DG.

Writing—original draft preparation: MRH.

Writing—review and editing: FG and DG.

Supervision: FG and MRH.

#### Conflicts of interest

The authors declare that they have no conflicts of interest.

#### Ethical issues

This case report was conducted ethically in accordance with the World Medical Association Declaration of Helsinki. The Research Ethics Committee of Isfahan University of Medical Sciences approved all procedures performed in the current study. Written informed consent was obtained from the patient for publication of the details of their medical case and any accompanying images. Besides, ethical issues (including plagiarism, data fabrication and double publication) have been completely observed by the authors.

#### Funding/Support

None.

#### References

1. Pagliai KA, Cohen BA. Pyogenic granuloma in children. *Pediatr Dermatol.* 2004 ;21:10-3. doi: 10.1111/j.0736-8046.2004.21102.x.
2. Mills SE, Cooper PH, Fechner RE. Lobular capillary hemangioma: the underlying lesion of pyogenic granuloma. A study of 73 cases from the oral and nasal mucous membranes. *Am J Surg Pathol.* 1980;4:470-9.
3. Delbrouck C, Chamiec M, Hassid S, Ghanooni R. Lobular capillary haemangioma of the nasal cavity during pregnancy. *J Laryngol Otol.* 2011;125:973-7. doi: 10.1017/S0022215111001654.
4. Abdul Gaffoor PM. Pyogenic granuloma of the scrotum. *Cutis.* 1998;62(6):282.
5. Sivaramakrishnan S, Vipul T, Sobi M, Deepthi R, Jayakar T. Pyogenic granuloma occurring at an unusual site a case report. *International Journal of Scientific Research.* 2018;7(4).
6. Bouscarat F, Bouchard C, Bouhour D. Paronychia and pyogenic granuloma of the great toes in patients treated with indinavir. *N Engl J Med.* 1998;338:1776-7. doi: 10.1056/NEJM199806113382417.
7. Campbell JP, Grekin RC, Ellis CN, Matsuda-John SS, Swanson NA, Voorhees JJ. Retinoid therapy is associated with excess granulation tissue responses. *J Am Acad Dermatol.* 1983;9:708-13. doi: 10.1016/s0190-9622(83)70184-2.
8. Curr N, Saunders H, Murugasu A, Cooray P, Schwarz M, Gin D. Multiple periungual pyogenic granulomas following systemic 5-fluorouracil. *Australas J Dermatol.* 2006;47:130-3. doi: 10.1111/j.1440-0960.2006.00248.x.
9. Piguet V, Borradori L. Pyogenic granuloma-like lesions during capecitabine therapy. *Br J Dermatol.* 2002;147:1270-2. doi: 10.1046/j.1365-2133.2002.05000\_6.x.
10. Plachouri KM, Georgiou S. Therapeutic approaches to pyogenic granuloma: an updated review. *Int J Dermatol.* 2019;58:642-8. doi: 10.1111/ijd.14268.

**Copyright** © 2023 The Author(s); Published by Society of Diabetic Nephropathy Prevention. This is an open-access article distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/4.0>), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.