Pyogenic Granuloma in an Unusual Site

Global Pediatric Health
Volume 4: 1–2

DOI: 10.1177/2333794X17704607
journals.sagepub.com/home/gph
SAGE

Dinesh Gowda, MD[1], and Cade Owens, MD[1]

Received February 28, 2017. Accepted for publication March 8, 2017.

Case

A 10-year-old boy presented to clinic with history of polypoid skin lesion on right lower chest for a month. Initially it was a small pinhead sized lesion but since then it has grown quickly to the present size of a peanut. It is not painful but has bled multiple times. Patient had no history of trauma to the area or preexisting skin condition. Physical exam shows an erythematous lobulated nodule measuring 1 cm × 1 cm with a friable and moist surface on right lower chest. A clinical diagnosis of pyogenic granuloma was made, and the patient was referred to a dermatologist. Three weeks later it regressed spontaneously and fell off even before he was seen by a dermatologist.

Discussion

Pyogenic granuloma (PG) is a benign vascular tumor that occurs on the skin and mucous membranes and is characterized by rapid growth and fragility (see Figure 1). Although the name suggests it, PG does not have an infectious etiology and is not composed of granulation tissue. PG typically grows rapidly over weeks to months, eventually stabilizing into a red papule. The friable surface of the lesion is prone to bleeding and ulceration and because of that often requires treatment. In pediatric population they commonly occur on the head and neck but our patient had it on the chest, which is an unusual site for PG. Based on our knowledge, there are no previous reports of PG on chest in children.

Epidemiology

The overall prevalence of PG is equal among males and females and can affect people of any age.[1] Within the pediatric population, however, males are more commonly affected with the average age of diagnosis between 6 and 10 years.[2] Among children, PG is relatively common, representing 0.5% of all skin nodules.[3]

Pathogenesis

Pyogenic granuloma is a misnomer in that it suggests an infectious etiology. The cause of PG, however, is unknown. Trauma, medications, underlying arteriovenous malformations, and the overproduction of angiogenic growth factors, among other things, have all been proposed to play a potential role in its development. Godfraind et al suggested that PG is a reactive lesion that results following trauma and occurs due to an impaired wound healing process.[4] Medications have also been implicated, specifically systemic medications. Retinoids, antineoplastic, and antiretroviral medications have all been associated with the development of PG.[5] Underlying arteriovenous malformations have been proposed as a potential cause due to the fact that PG develops over port wine stains, which are themselves caused by capillary malformations.[6] Other theories focus on an imbalance between angiogenic promoters and inhibitors that lead to capillary overgrowth. The transcription factors pATF2 and pSTAT3 have been found to be overexpressed in PG, suggesting that an imbalance between angiogenic stimulus and inhibition may play a role in the development of PG.[7] Taken together, it is likely that there are various causes of PG.

Clinical Presentation

The typical presentation is that of a red solitary lesion that grows rapidly over weeks to months and then stabilizes in size. It can be pedunculated or sessile and rarely exceeds 1 cm in diameter. The lesion can be on the skin or mucosal surface and has a characteristic ancanthotic base known as the "epithelial collarette."[3] The lesion is painless but patients typically seek medical attention due to its rapid growth or because the lesion can bleed following relatively minor trauma. Location of PG varies with age. In children, PG more commonly occurs on the head or neck, whereas in adults the lesions are more commonly on the trunk or extremities.[1-3] Although PG are typically solitary, cases of multiple PG have been

[1]Texas Tech University Health Sciences Center at the Permian Basin, Odessa, TX, USA

Corresponding Author:
Dinesh Gowda, Texas Tech University Health Sciences Center at the Permian Basin, 701 W 5th Street, Odessa, TX 79763-4368, USA.
Email: drdineshgowda@gmail.com

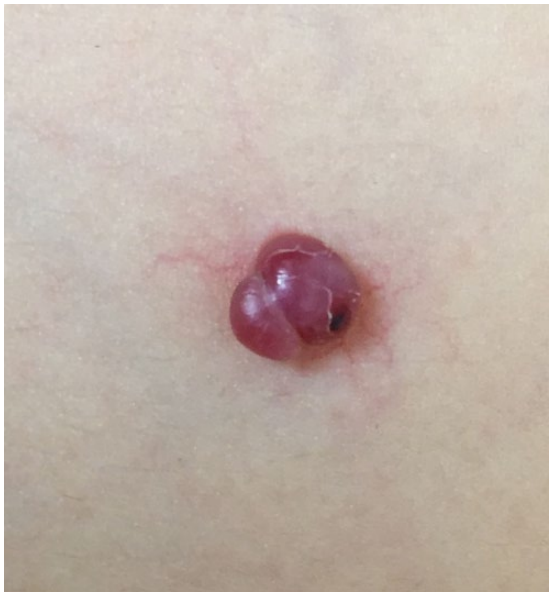

Figure 1. Pyogenic granuloma.

reported. In children, clusters of PG have developed over the site of vascular malformations.[8] These, however, are the exception.

Diagnosis

PG is typically a clinical diagnosis but can be confirmed with histopathology. Microscopic examination will show a polypoid lesion with a lobular arrangement of capillaries at the base. Other features could include inflammation, superficial stromal edema, capillary dilatation, and granulation tissue.[3] Histologic examination is typically only used when the diagnosis is in question.

Treatment

Although treatment is not required due to the benign nature of PG, some form of treatment usually occurs due to its propensity to bleed. Therapeutic options can be categorized broadly into surgical and nonsurgical. The advantage of surgical therapies is that they provide tissue for histologic examination, which can be used to differentiate between PG and other malignant etiologies. However, surgical removal leads to more scarring than some nonsurgical approaches and may not be the best option for cosmetic reasons. Another consideration when deciding treatment is that of recurrence. Rates of recurrence vary between the location of the lesion and the therapeutic option chosen and should be considered when deciding on treatment.[2,9] Overall, surgical therapies are more commonly used.[10]

Author Contributions

DG: Contributed to conception and design; critically revised the manuscript; gave final approval; agrees to be accountable for all aspects of work ensuring integrity and accuracy.
CO: Drafted the manuscript.

Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

The author(s) received no financial support for the research, authorship, and/or publication of this article.

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