Dermatology Practical & Conceptual

Congenital Perineal Groove in Males: A Comprehensive Review of a Rare Anomaly

Julia Nowowiejska[1], Vincenzo Piccolo[2], Dirk Van Gysel[3,4], Ramon Grimalt[5], Andrea Bassi[6], Mario Cutrone[7]

1 Department of Dermatology and Venereology, Medical University of Bialystok, Poland
2 Dermatology Unit, University of Campania, Naples, Italy
3 Interdisciplinary Unit of Pediatric Dermatology, Vrije Universiteit Brussel (VUB), Universitair Ziekenhuis Brussel (UZ Brussel), Brussels, Belgium
4 Department of Pediatrics, O.L. Vrouw Hospital Aalst, Aalst, Belgium
5 Universitat Internacional de Catalunya, Barcelona, Spain
6 Division of Dermatology, Azienda Toscana Nord Ovest, Lucca, Italy
7 Ambulatorio di Dermatologia Pediatrica, Centro di Medicina Mestre Venezia, Italy

Key words: Perineal groove, Congenital anomaly, Pediatric dermatology

Citation: Nowowiejska J, Piccolo V, Van Gysel D, Grimalt R, Bassi A, Cutrone M. Congenital Perineal Groove in Males: A Comprehensive Review of a Rare Anomaly. *Dermatol Pract Concept*. 2025;15(3):5303. DOI: https://doi.org/10.5826/dpc.1503a5303

Accepted: January 7, 2025; **Published:** July 2025

Funding: None.

Competing Interests: None.

Authorship: All authors have contributed significantly to this publication.

Corresponding Author: Assist. Prof. Julia Nowowiejska, MD, PhD, Department of Dermatology and Venereology, Medical University of Bialystok, Poland. ORCID 0000-0002-6870-1167. E-mail: julia.nowowiejska@umb.edu.pl

Introduction

Perineal groove (PG) is a rare congenital anomaly marked by an epithelialized furrow extending from the scrotum or posterior aspect of the male genitalia toward the anus [1]. While it is more commonly documented in females [2], cases in males, though rarer, do occur. This condition is benign and usually asymptomatic [2], though its unique appearance can understandably cause concern.

Case Presentation

A 3-day-old male newborn, delivered at term after an uncomplicated pregnancy, presented with a normal perinatal course. Physical examination revealed typical male genitalia, testicles in place. However, a slightly moist, red fissure was noted along the median perineal raphe, extending from the base of the scrotum toward the anus (Figure 1A). The lesion was non-tender, and urination was normal, with no signs of infection on urinalysis. Ultrasound imaging confirmed that the lesion was superficial, with no abnormalities detected in the urinary tract or other structures.

Conclusion

In male patients, the PG appears as a non-keratinized, moist furrow along the perineum, lacking hair follicles and sweat glands and resembling mucosa rather than typical perineal

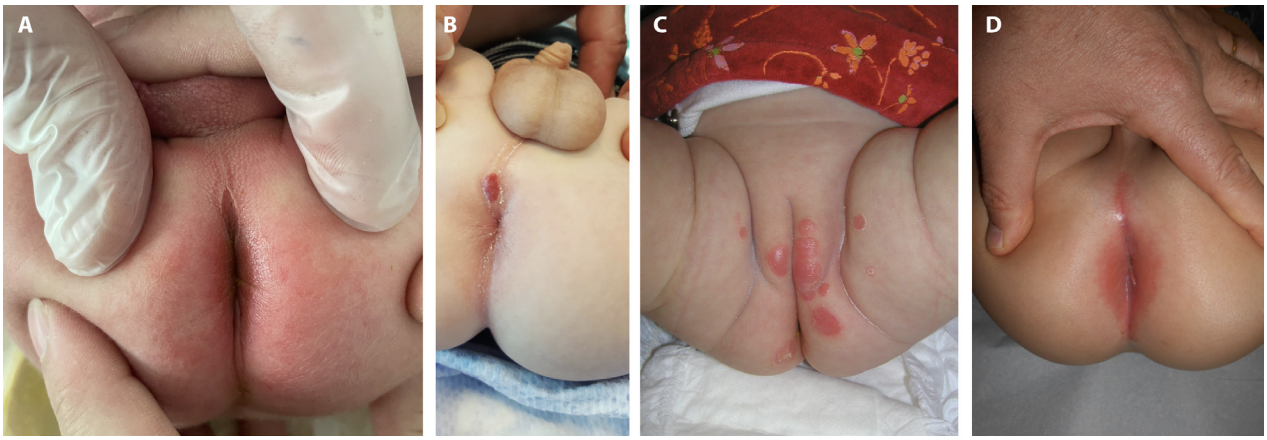

Figure 1. (A) Perineal groove in the described patient and possible differential diagnoses: (B) perineal hemangioma, (C) perineal staphylococcal infection, and (D) perineal streptococcal infection.

Table 1. Possible Differential Diagnoses of Perineal Groove.

Differential Diagnosis	Differentiating Features
Perineal hemangioma	Vascular, size augmentation in weeks
Perineal staphylococcal infection	New blisters, fast response to antibiotic therapy, acquired, not congenital
Perineal streptococcal infection	Acquired, not congenital; painful, perianal area also involved

skin [3,4]. This groove is often discovered during the newborn's initial physical examination [3,5].

The groove typically extends from the scrotal base toward the anus, while surrounding skin is normally developed, without functional abnormalities in the genital or anorectal regions. The PG is generally an isolated anomaly, with no associated congenital malformation in most cases [2,3].

The exact cause of the PG remains unclear, though it is believed to arise from incomplete fusion of the urogenital folds during fetal development. Failure of this fusion results in the epithelialized furrow characteristic of the PG [5].

PG is typically considered a cosmetic anomaly without significant functional implications. However, in rare cases, it may be associated with other urogenital or anorectal abnormalities [5], underscoring the importance of a thorough clinical evaluation.

Diagnosis of a PG is generally based on its characteristic appearance during the newborn examination [2,5]. Its moist, epithelialized nature distinguishes it from other conditions, such as fistulas or incomplete anal openings. A detailed physical examination, often including palpation of surrounding structures, is usually sufficient to confirm the diagnosis [2]. The possible differential diagnoses are presented in Table 1 and Figure 1, B-D.

In most cases, imaging studies or further diagnostic procedures are unnecessary unless there is concern about associated anomalies [5]. If there is suspicion of anal malformation or other urogenital anomalies, ultrasound or MRI may be used to rule out any underlying conditions [6].

PG in males rarely requires surgical intervention, as it tends to epithelialize and heal spontaneously within the first few months of life [5]. Conservative management, such as keeping the area clean and applying protective barriers, is typically sufficient [2].

The long-term prognosis for males with PG is excellent [5]. This anomaly does not impact urinary or bowel function, and the groove generally closes on its own as the child grows. There are no known long-term complications associated with untreated PG [3].

PG is a rare benign congenital anomaly in males. While its appearance may initially cause concern, it is generally asymptomatic and resolves spontaneously. Early recognition of the condition is important to prevent unnecessary procedures [1]. Further studies into the embryological origins of the PG could provide insight into its etiology and any potential risk factors. For now, clinicians should be aware of this condition.

Informed Consent: The patient's parents in this manuscript have given written informed consent to the publication of his case details.

References

1. Samuk I, Amerstorfer EE, Fanjul M, et al. Perineal Groove: An Anorectal Malformation Network, Consortium Study. *J Pediatr*. 2020;222:207-212. DOI:10.1016/j.jpeds.2020.03.026

2. Servidio AG, Baldo F, Barbi E. Perineal groove: A rare congenital malformation. *Pediatr Neonatol*. 2022;63(2):192-193. DOI:10.1016/j.pedneo.2021.09.002.
3. Wang K, Pang W, Chen W, Zhang D, Wu D, Chen Y. Characteristics and treatment of congenital perineal groove in male patients. *Front Pediatr*. 2023;11:1103867. Published 2023 Feb 2. DOI:10.3389/fped.2023.1103867.
4. Harsono M, Pourcyrous M. Perineal Groove: A Rare Congenital Midline Defect of Perineum. *AJP Rep*. 2016;6(1):e30-e32. DOI:10.1055/s-0035-1566311.
5. Moreno Alfonso JC, Velayos M, Andrés Moreno A, et al. Perineal groove: an old, little known entity. Surco perineal: un viejo poco conocido. *Cir Pediatr*. 2022;35(3):146-148. Published 2022 Jul 1. DOI:10.54847/cp.2022.03.19
6. Boutsikou T, Mougiou V, Sokou R, et al. Four Cases of Perineal Groove-Experience of a Greek Maternity Hospital. *Medicina (Kaunas)*. 2019;55(8):488. Published 2019 Aug 15. DOI:10.3390/medicina55080488.