



Perineal groove: Case report

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ABSTRACT

We report the case of a newborn female with a perineal groove and review the limited literature. This is a rare congenital midline malformation of the perineal raphe with no data driven management strategies available. Our patient was managed conservatively with topical Vaseline application. At 52 days of life, her perineal groove was about 50% resolved, and at 9 months of age, it was barely perceptible. She maintained normal urinary function without evidence of infection or discomfort. We recommend this strategy for initial management of perineal grooves that have not had any symptoms or complications attributable to the condition.

1. Introduction

Perineal groove is a rare congenital midline malformation of the perineal raphe. Although the incidence and pathogenesis of perineal groove is unknown, there is a clear female predominance.¹ Instead of keratinized epithelial skin, the perineum has a non-epithelialized midline sulcus and mucosal membrane spanning the region from the posterior vaginal fourchette or scrotal raphe to the anterior anal orifice.² In addition to malformations of the perineum, a female with this anomaly may also exhibit the following aberrations: perineal canal, covered anus (designated as either an anocutaneous or anovulvar fistula), anterior perineal or vestibular anus, and/or rectovestibular fistula.³ We report the case of a newborn female with a perineal groove. Our objective was to report the outcome of our conservative management and to review the literature on perineal grooves.

2. Case presentation

In March 2021, a newborn female was noted to have a wet sulcus extending from the posterior fourchette of the vagina posteriorly for 1 cm towards the anus (Fig. 1). She was the result of an in vitro fertilization pregnancy that was complicated by advanced maternal age (42 years) and gestational diabetes. She was born at 39-week gestation via uncomplicated cesarean section. She was admitted to the neonatal intensive care unit for management of hypoglycemia. Urology was consulted on the third day of life and made the diagnosis of perineal

groove based on physical exam (Fig. 1). She had no evidence of infection, discomfort, or difficulties with urination, so we recommended conservative management with application of Vaseline with each diaper change and close clinical follow up. By the tenth day of life, her hypoglycemia resolved, and she was discharged to home.

When seen on day 52 of life, she continued to do well without evidence of infection, discomfort, or difficulties with urination. At that point, perineal exam showed that the perineal groove had decreased in size to 5 mm (Fig. 2). There was no erythema or irritation. The introitus and anus were normally positioned and configured. We recommended continued conservative management with application of Vaseline with each diaper change. At 9 months of age, the perineal groove was barely visible and only 1–2 mm in length (Fig. 3). She continued to do well clinically.

3. Discussion

Perineal groove is a rare, congenital midline anomaly largely defined by its wet sulcus extending from the posterior vaginal fourchette to the anterior anus.⁴ Although the embryologic cause of perineal grooves has yet to be determined, several hypotheses have been proposed. These include a defective uroanal septum, persistent open cloacal duct, and incomplete fusion of the perineal raphe or median genital folds. This child was the product of an invitro fertilization associated with early gestational estrogen and progesterone supplementation, raising the possibility of a hormonal effect.

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Fig. 1. Appearance of the patient's perineum at day 3 of life with the perineal groove evidenced by the brighter red, moist midline tissue. (For interpretation of the references to colour in this figure legend, the reader is referred to the Web version of this article.)

This benign malformation is usually asymptomatic and does not typically require urgent interventions.² Some urologists recommend elective surgical excision and primary closure for cosmetic reasons or to avert infection of the groove or external genitalia. However, since perineal grooves tend to gradually epithelialize within the first year of life, surgical treatment can be deferred unless complications emanate. Since perineal grooves are largely unrecognized and underreported, the recorded incidences are likely not reflective of this anomaly's true prevalence. Therefore, the percentage of these cases that develop complications requiring interventions cannot be determined.

The general ambiguity surrounding this malformation has often led perineal groove to be confused or misdiagnosed as anal fissure, irritant dermatitis, hemangiomas, infection, lichen sclerosis, and sexual abuse.⁵ Thus, the identification of a perineal groove as a congenital anomaly is crucial to avert misdiagnoses, gratuitous treatment, and/or unnecessary surgical intervention.

4. Conclusion

We present the case of a perineal groove in a newborn girl who improved with topical Vaseline application. This case suggests that



Fig. 2. Appearance at 52 days of life with the perineal groove having shrunk by about 50%.

initial conservative management with local wound care is safe and effectively avoids the need for neonatal operative intervention. However, the rate of complications for this rare condition is unknown, so close surveillance is necessary.

Ethics approval

Case reports without identifiable PHI do not require approval. Verbal consent was obtained from the parent.

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Authors' contributions

RK and CP served as urology consultants for the patient during her initial hospitalization and her outpatient follow up. IL performed the literature search and drafted the manuscript. RK and CP finalized the manuscript. All authors have read and approved the final manuscript.



Fig. 3. Appearance at 9 months of life with near complete resolution of the perineal groove.

Declaration of competing interests

None declared.

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