

Dorsal penile frenulum: A rare developmental abnormality

Bhavinder Arora

ABSTRACT

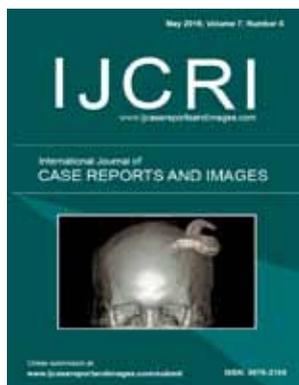
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Case Report: This abnormality was present with normal external urethral meatus in a young adult male. There was no associated penile torsion.

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Introduction: Dorsal penile frenulum is a very rare abnormality in literature. **Case Report:** This abnormality was present with normal external urethral meatus in a young adult male. There was no associated penile torsion. **Conclusion:** This is the second case report in medical literature. A brief description of preputial anatomy and frenar band band is described. Various hypotheses have been discussed for development of dorsal penile frenulum.

Keywords: Dorsal penile frenulum, Penile frenulum, Penile torsion

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INTRODUCTION

Preputial anatomy and frenar band

In classical description of prepuce, it is divided into outer and inner (mucosal) layer. The outer layer is a continuation of the shaft skin, up to the rim of junction with the mucosa at the opening of the prepuce at rest. The mucosa or inner preputial skin from the junctional or transitional zone to the sulcus where it continues as the mucosal covering of the glans [1]. Just inside the junctional rim of prepuce at the dorsal aspect is a transverse band of ridges 10–15 mm wide. Except the area of this band rest of the mucosa is smooth. The ridged band is continuous with the frenulum, being a radial band over 60% of the penile diameter—the dorsal and lateral aspects—then turning distally to form a V-shape on the ventral aspect whilst reducing its width to merge with the frenulum [1]. Dorsal penile frenulum is a rare developmental abnormality; only one such case is available in literature [2]. We report another case of dorsal penile frenulum with normal penile anatomy, normal ventral frenulum but a dorsal frenulum present since birth.

CASE REPORT

A 24-year-old male presented with complaint of dyspareunia. There was no history of balanoposthitis in childhood. On examination, the size of penis, scrotum and testis was found to be normal. The external urinary meatus was at its normal position. On retracting the prepuce, there was a band connecting dorsum of glans to prepuce, V-shaped and double layered. A normal ventral frenulum was present. Frenuloplasty of the dorsal penile frenulum was done which led to retraction of normal



Figure 1: Dorsal penile frenulum with normal external urethral meatus.



Figure 4: Double layered dorsal frenulum.



Figure 2: Lateral view of dorsal frenulum.



Figure 3: Normal ventral frenulum and median raphe.

prepuce. In postoperative period, patient remained asymptomatic.

DISCUSSION

The embryological development of penile frenulum is related to the development of prepuce. The prepuce is formed by reduplication of the ectoderm covering the distal part of the phallus in third month of fetal life. The prepuce separates from the glans to form preputial sac and residual adhesion of ectoderm to the glans penis on the ventral aspect persists and is called frenulum [3]. The preputial and urethral folds fuse on the ventrum of the glans as the frenulum. Failure of fusion of the urethral folds blocks development of prepuce ventrally especially the frenulum [4]. Penile torsion is a rotation of the shaft of penis, usually to the left (counterclockwise) direction. It results in the urethral meatus being placed in oblique position, such that median raphe makes a spiral curve from the base of the penis to the meatus [5]. Singla et al. Postulated that probably during the embryological development of preputial sac, the latter separated from the glans on all sides except on the dorsal side and residual adhesions on dorsal side formed the dorsal frenulum [2].

CONCLUSION

I agree with this theory of adhesion during embryological life because

- Frenulum thus formed was two layered
- It was adherent to the dorsum of glans at one point only

Simple division of dorsal frenulum led to restoration of normal prepuce.

Author Contributions

Bhavinder Arora – Substantial contributions to conception and design, Acquisition of data, Analysis and interpretation of data, Drafting the article, Revising it critically for important intellectual content, Final approval of the version to be published

Guarantor

The corresponding author is the guarantor of submission.

Conflict of Interest

Authors declare no conflict of interest.

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