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Congenital dorsal penile cutaneous fistula: A case report

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ABSTRACT

Congenital cutaneous fistula occurring in the pubic region among infants and young children is an extremely uncommon congenital disorder. It is primarily characterized by an unusual pinpoint opening near the central line of the area. The following description pertains to an instance involving 3-years old boy who had a congenital dorsal penile cutaneous fistula. Initially, the primary indication was the presence of pus at the fistula's opening. Following surgery, the child experienced a satisfactory recovery with no significant complications.

Keywords: Congenital, dorsal penile cutaneous fistula, dysplasia disease, surgical treatment

I. INTRODUCTION

Congenital cutaneous fistulas of the pubic or penile region are exceedingly rare anomalies observed in infants and young children. These lesions typically present as a small, pinpoint opening along the midline of the lower abdomen or genital area and may remain asymptomatic or manifest with intermittent discharge or infection. Due to their uncommon occurrence, they are frequently misdiagnosed or discovered incidentally.

The precise embryological origin of these fistulas remains a subject of debate. Various hypotheses, have been proposed to explain their formation.

Despite their rarity, accurate diagnosis and timely surgical management are crucial to prevent recurrent infections and ensure a favorable outcome.

This article presents a case of a 3-year-old boy with a congenital dorsal penile cutaneous fistula, discusses the surgical management, and reviews the current embryological theories regarding its etiology.

II. CASE REPORT

We're presenting a case involving a 3-years-old boy who had a congenital dorsal penile cutaneous fistula. Initially, the main symptom was pus discharge from the fistula opening. This rare congenital condition in infants involves an abnormal pinpoint opening near the pubic area's midline.

The patient, now 4 years old, was admitted to the hospital with a history of 6 month of pus discharge. Physical examination showed a normally developing penis with an abnormal pinpoint opening at the back of the penis root's midline, about 2 mm in diameter. White secretion with an unpleasant odor could be squeezed from the fistula. The preliminary diagnosis was a congenital dorsal penile cutaneous fistula. (Fig.1)

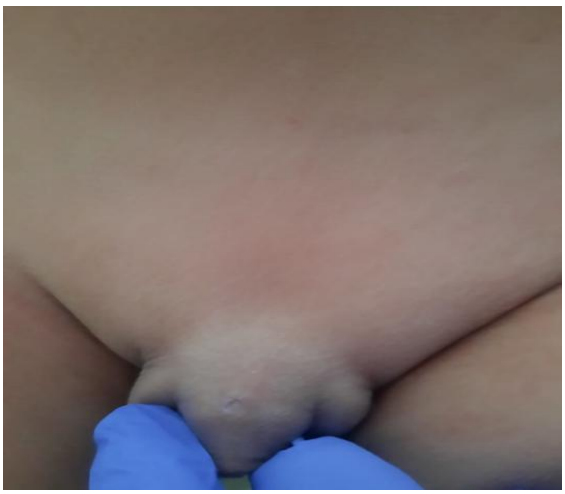

Figure 1: abnormal pinpoint opening at the back of the penis root's midline

Surgical intervention was carried out under general anesthesia. The fistulous tract extended to the inferior margin of the pubic symphysis, where it terminated in a blind end. No communication was identified between the fistula and either the vascular structures or the urethra. An arched incision was made along the dorsal aspect of the fistula, starting from the penile root. The tract was carefully dissected and mobilized up to its blind termination at the pubic symphysis, allowing for its complete excision. (Fig.2)

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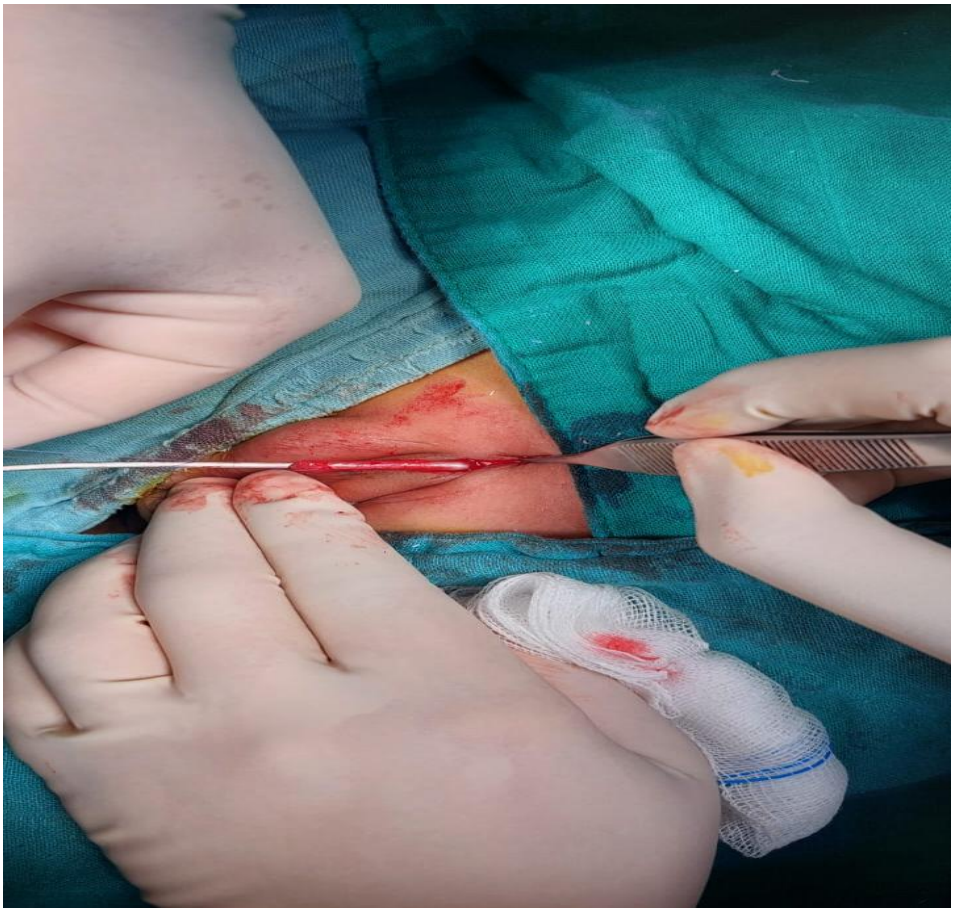

Figure 2: Dissection the tract of the fistula

After confirming the absence of bleeding, we proceeded to suture layer by layer. (Fig.3)

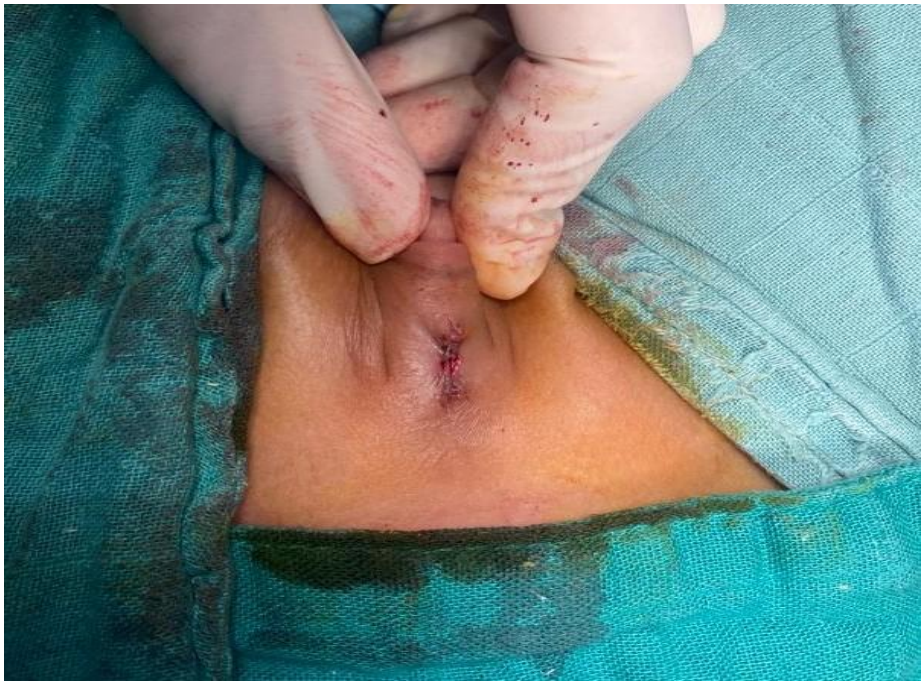

Figure 3: suture after resection of the fistula.

The child's recovery after surgery was uneventful, with no noticeable complications, and he was discharged on the 2nd day following the procedure.

III. Discussion

Congenital cutaneous fistulas in the pubic or penile region are rare developmental anomalies with an etiology that remains partially understood. Several embryological hypotheses have been proposed to explain their origin.

The most widely accepted theory suggests a **failure of midline fusion of the lower abdominal wall** during embryogenesis. In this context, incomplete fusion of the infraumbilical abdominal structures may lead to the persistence of a fistulous tract connecting the skin to deeper structures, and in some cases, to the urinary tract [1].

Another hypothesis considers these fistulas as **variants of dorsal urethral duplication**, resulting from abnormalities in urethral plate development. A focal defect in the urethral plate could prevent complete fusion of the urethral folds, giving rise to a fistulous opening independent of the normal urethral meatus [2].

Some researchers have proposed that these fistulas arise from the **persistence of the primitive urogenital sinus**, which normally regresses during fetal development. Failure of this regression could lead to the formation of an epithelialized tract opening near the median raphe [3].

Finally, **incomplete involution of the embryonic cloaca**, a transient structure common to the gastrointestinal and urogenital tracts, has also been suggested.

A defect in the regression of this structure may explain the presence of abnormal tracts in the perineal or pubic region

It is important to note that the rarity of this condition makes it difficult to establish a definitive etiology. However, most reported cases in the literature support a strictly congenital origin, usually isolated and not associated with syndromic conditions. The presence of infectious symptoms, such as purulent discharge observed in our patient, may represent a secondary infection of a previously asymptomatic congenital tract.

Surgical excision of the fistulous tract remains the treatment of choice. This Surgery should be performed in conjunction with fistulography and specific anatomical conditions to ensure function, complete resection, and cosmetic reconstruction. [4].

In our case, we didn’t perform fistulography, but we achieved complete separation of the fistula up to its blind end, which measured approximately 20 mm in length. The operation didn't cause any damage to peripheral vascular nerves, resulting in a successful treatment.

Postoperative outcomes are generally favorable, as demonstrated in our case.

However, given the scarcity of reports on such diseases, analyzing clinical characteristics across a larger number of cases would be instrumental in improving diagnosis and treatment approaches.

IV. Conclusion

Congenital skin fistulas in the area of the pubis or penis, although rare, must be treated early to avoid the risk of recurrent infections.

Further reporting and investigation of similar cases are essential to enhance understanding of this uncommon condition and to refine both diagnostic and therapeutic approaches.

Références

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