

Post Pubertal Vulval Synechiae: A Rare Case Report

Samantha Ruth K¹

¹Research Scholar, Department of Obstetrics and Gynaecology, SRIHER, Sri Ramachandra Nagar, Porur, Chennai 600116, samantha.kannan06@gmail.com

Abstract:

Labial fusion, or vulval synechiae, is a rare condition in adolescents and adults, commonly seen in prepubertal girls. Labial fusion is a condition in which the labia minora around the opening of the vagina get fused together or get covered with a fleshy membrane. This usually covers the vaginal opening completely leaving a very small gap through which urine and menstrual bleeding occurs. Labial fusion occurs commonly in pre pubertal girls, with a peak incidence of around 3% in the second year of life. However it rarely occurs in adults. Labial fusion may be partial(involving upper or lower labia) or complete. We report a rare case of a 17-year-old girl presenting with secondary amenorrhea, dysuria, and lower abdominal pain, who was found to have dense vulval synechiae. Vulval synechiae release done and patient was started on oestrogen therapy and topical steroids. This case highlights the atypical presentation and the need for careful evaluation in adolescents with genitourinary complaints.

Keywords: Labial fusion, Vulval synechiae, Amenorrhea, Hydrocolpos, Adolescents

INTRODUCTION

Vulval synechiae, sometimes described as labial fusion or adhesion, occurs when the labia minora adhere along the midline, leading to narrowing or even complete closure of the vaginal introitus. The condition is typically encountered in prepubertal girls, where low circulating estrogen and recurrent local irritation create a favorable setting for adhesions to form. In this age group, the reported frequency is about 2%, with the highest occurrence during the toddler years. By contrast, the appearance of vulval synechiae after menarche is uncommon and generally reflects acquired rather than hormonal causes.

In adolescents and adult women, several factors have been implicated in the development of vulval adhesions. These include repeated vulval irritation or infection, chronic dermatological disorders such as lichen sclerosus, scarring after genital trauma or surgery, poor hygiene, and, in some reports, systemic inflammatory conditions. Unlike in childhood, spontaneous resolution does not usually occur, and the condition is often overlooked because its symptoms can mimic more common gynecological or urinary disorders.

Clinical manifestations range widely. Some individuals remain asymptomatic, while others experience significant discomfort including voiding difficulties, post-void dribbling, dysuria, altered urinary stream, dyspareunia, menstrual outflow obstruction, or pelvic pain. In severe cases, urinary retention or secondary complications such as hydrocolpos may develop. Because of this varied presentation, diagnosis in adolescents is frequently delayed.

Treatment is guided by the severity of symptoms and the extent of fusion. For mild or early cases, local therapy with estrogen or high-potency corticosteroid creams can be effective, particularly when combined with improved genital hygiene and emollient use. When adhesions are dense or recurrent, surgical separation may be required. Despite appropriate management, recurrence is well recognized, underscoring the need for careful follow-up. This report describes a rare case of post-pubertal vulval synechiae presenting with secondary amenorrhea.

Case Presentation

A 17-year-old unmarried girl with no comorbidities, presented with complaints of amenorrhea for 3 years, intermittent lower abdominal pain, and difficulty in micturition. She had a past history of pulmonary tuberculosis in July 2024 and completed treatment in January 2025. Menarche occurred at age 14, with only two menstrual cycles since then. There was no history of bowel disturbances or sexual abuse. On examination, her BMI was 17.05 kg/m². Systemic examination was unremarkable. Local examination revealed adhesion of the labia minora with a pinhole opening for the urethral meatus.

Investigations showed hemoglobin 9 g/dL, Free T4 1.04ng/dL TSH 1.100 microIU/mL, FBS 85mg/dL, PPBS 88mg/dL, HbA1C 5.3%, serum prolactin 10.22 ng/mL, serum FSH 1.97mIU/mL, serum LH 2.33mIU/mL, serum estradiol 38.11pg/mL. MRI pelvis showed an anteverted uterus 5.2 x 2.5cm, endometrial thickness 5mm, myometrium and serosa show normal signal intensity and intact. Bilateral ovaries are normal. Distended vagina with fluid within- indicative of hydrocolpos. Vulval synechiae

release with diagnostic cystoscopy revealed dense fibrous vulval synechiae extending the length of the vulva with a slit-like opening below the clitoris. Hydrocolpos was due to retrograde urinary flow. Histopathology of whitish firm tubercles in vulval mucosa was performed which showed no evidence of granuloma, dysplasia or malignancy. Cystoscopy showed normal bladder and urethra. Bladder ureteric orifice normal.

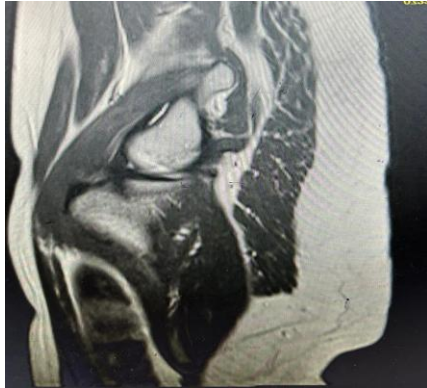


FIGURE 1: MRI PELVIS

DISCUSSION

Labial adhesion is common in prepubertal girls due to a hypoestrogenic state, but rare in post-pubertal women. In adults, etiologies include recurrent urinary tract infections, trauma, poor hygiene, or dermatological conditions. Management typically involves topical estrogen or corticosteroid creams, though recurrence occurs in nearly 40% of cases. Surgical adhesiolysis is reserved for resistant or severe cases. This case is unique due to its occurrence in an adolescent with no clear underlying etiology.

CONCLUSION

Vulval synechiae in post-pubertal girls is an uncommon clinical finding that can present with varied symptoms ranging from urinary complaints to menstrual irregularities. Because the condition is often overlooked in this age group, it may lead to delayed diagnosis and unnecessary investigations. Careful genital examination remains crucial for early recognition. Surgical release offers definitive management in dense or symptomatic adhesions, and adjunctive use of topical estrogen or emollients can help reduce the risk of recurrence. This case emphasizes the need for heightened clinical awareness of vulval synechiae as a rare but significant cause of secondary amenorrhea and urinary dysfunction in adolescents. This rare case of post-pubertal vulval synechiae presenting with secondary amenorrhea and hydrocolpos demonstrates the importance of considering labial fusion as a differential diagnosis in adolescents with genitourinary complaints. Surgical release followed by hormonal support proved beneficial in this case. Further research is required to explore underlying causes and optimize management strategies.



FIGURE 2: INTRAOPERATIVE FINDINGS

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