

## What Is The Real Cause Of Labial Synechia?

\*Ayşenur Cerrah CELAYİR, \*Müjgan ORAL

Zeynep Kamil Women and Children Education and Research Hospital, Istanbul, Turkey.

\*Assoc. Prof. in Pediatric Surgery, Chief of The Pediatric Surgery, \*\*Consultant in Pediatrics

**Correspondence Address:** Ayşenur Cerrah Celayir M.D. Sakacı sok. Mehmet Sayman Apt.

No: 77- 8, Kazasker, 34736 Kadıköy - ISTANBUL, Türkiye

**Tel:** + 90 216 4106048 **E-mail:** acelayir@ultratv.net

### **SUMMARY**

**(What Is The Real Cause Of Labial Synechia?)**

**Objective:** Labial synechia is almost certainly an acquired condition in girls and results from inflammation that causes adhesion of the labia minora. The exact cause of labial synechia is unclear. The aim of this study was to evaluate the underlying cause of labial synechia.

**Material and Methods:** We report 23 girls with labial synechia among the private outpatient population after prospective analysis of the last 45 months.

**Results:** The mean age at presentation was 18 months. None of them had symptoms of urinary tract infection. All patients with labial synechia were screened for bacteruria. Two girls had proven bacteruria and two girls had diaper dermatitis. History and/or physical findings were not consistent with sexual abuse in any patient. No child had vulvovaginitis, or known genital trauma. In our series the most remarkable findings were that none of the patients had poor perineal hygiene and secondly these mothers were very careful and very scrupulous about the perineal cleaning of their children.

**Conclusions:** According to our observation, we think that microtraumas like overcleaning causing mechanical mucosal injury of the perineum may lead to adhesion of labia minora, because all mothers were cleaned the perineum of their daughter too much.

**Key words:** Labial Synechia, labial adhesion, childhood

### **INTRODUCTION**

Labial synechia is defined as either partial or complete adherence of the labia minora (1-15). Other names for this condition include vulvar fusion, synechia of the vulva, adhesion of the labia minora, and agglutination of the labia minora (3). Labial synechia is almost certainly an acquired condition in girls and results from inflammation that causes adhesion of the

### **ÖZET**

**(Labiyal yapışıklığın gerçek nedeni nedir?: İleriye dönük bir çalışma)**

**Amaç:** Labiyal yapışıklık kızlarda hemen daima edinilmiş bir durumdur ve küçük labiyaların yapışmasına neden olan inflamasyon sonucunda meydana gelir. Labiyal yapışıklık oluşmasının gerçek nedeni bilinmemektedir. Bu çalışmanın amacı labiyal yapışıklığın altında yatan nedenlerinin değerlendirilmesidir.

**Gereç ve Yöntem:** Bu çalışma ileriye dönük olarak 45 aylık periyotta özel muayenehanede takip edilen 23 labiyal yapışıklı kız hastada yapılmıştır.

**Bulgular:** Ortalama başvuru yaşı 18 aydı. Hiçbirinde üriner infeksiyon belirtileri yoktu. Tüm hastalar bakteriüri açısından tetkik edildi. İki hastada bakteriüri saptandı ve iki kızda ise beze bağlı dermatit mevcuttu. Hiçbir hastada cinsel istismar öyküsü ve fiziksel muayene bulgusu yoktu. Hiçbir hastada vulvovaginit yoktu ve genital travma geçirmemişti. Serimizdeki en belirgin bulgular; kötü peineal hijyenli hasta hiç olmaması ve annelerin çocuklarının perine temizliği konusunda aşırı dikkatli ve titiz olmalarıydı.

**Sonuç:** Gözlemlerimize göre, aşırı temizlemeyle oluşan mikrotravmaların perinede mekanik olarak mukozal hasar sonucu labiya minorada yapışıklığa yol açabileceğini düşünmekteyiz. Çünkü tüm anneler kızlarının perinesini gereğinden fazla aşırı temizlemekteydi.

**Key words:** Labiyal yapışıklık, labiyal şinezi, labiyal adezyon, çocukluk çağı

labia minora by a thin, bluish, semitransparent membrane (11). The exact cause of labial synechia is unclear. We observed these lesions in a group of patients within a higher socioeconomic level in a previous study (8,9). The purpose of this study was to stress this critical observation about the occurrence of labial synechia as a prospectively.

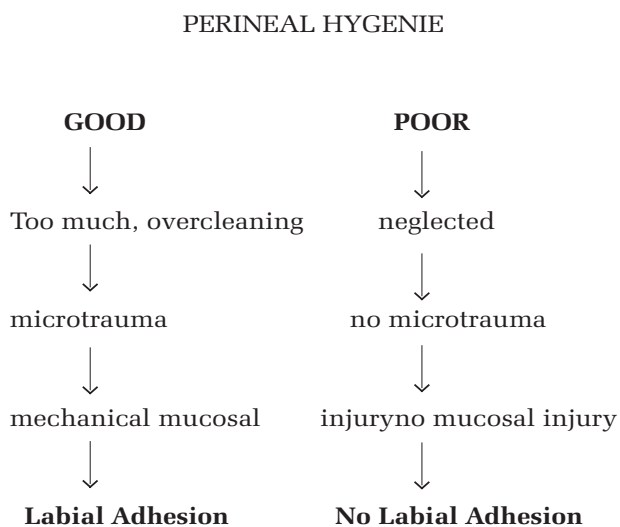
## MATERIALS AND METHODS

The study consisted of 23 childrens who admitted in private practice only within a 45-month period, between January 1999 and September 2003. The diagnosis of labial synechiae was made on perineal inspection and examination. Records of patients with labial synechiae were studied in detail, and the following information was noted; patient's age, duration of labial synechiae, history and physical findings consistent with sexual misuse, history of trauma, history of urinary infection, other physical findings (particularly evidence of seborrheic or atopic dermatitis), therapeutic interventions, and follow-up evaluation, urinary analysis and if required ultrasonografic examination of the urinary tract. We also looked to the sociocultural and educational level of the family, and which method they use for the perineal cleaning of their children.

## RESULTS

There are approximately 20.000 deliveries per year in our hospital and 4.000 patients per year admitted to the outpatient clinic for pediatric surgery. Among this population who had very poor sociocultural properties in generally, the records of patients with labial synechiae were less than 3 patients per year. In contrast to these findings, 23 in private practice, we diagnosed approximately 6-7 patients among in approximately 1000 patients per year. Patients ranged in age from 3 months to 7 years, mean age was 18 months. The duration of fusion ranged from 2 weeks to 2 years.

**Table 1:** The hypothetised algoritma of Labial Adhesion



The physical examination, apart from the genital and anal findings, was normal in all patients. No patient had physical evidence of seborrheic or atopic dermatitis or a specific history of trauma or sexual misuse. No patient had a history of recurrent urinary tract infection. Urine cultures were negative in all patients except for two children. Two babies, 4 months old and 2 years old, had a documented urinary tract infection with E.Coli. After antibiotherapy, urine cultures were negative in these babies and genitourinary ultrasonograms were normal. In general, most of the families at our hospital are from a low sociocultural level and are poorly educated; among this group of patients no labial synechiae was seen. In patients with labial synechiae, perineal cleaning was done via wiping on several occasions during diaper changing by attentive mothers. These patients's perineum was very clean and their mothers were very vigorous about perineal cleaning of their children.

At the time of referral, most patients had received medical therapy, but only three patients had obtained resolution of their labial agglutination with topical estrogen. All patients were treated with separation with a haemostatic clamp without difficulty and continued vigilance on the part of the parents to keep the area clean and dry. Re-fusion after cessation of therapy was noted in five patients who were followed up for three year and separation therapy was repeated.

## DISCUSSION

The exact cause of labial fusion is unknown, but it was uniformly suggested that it is an acquired condition (1,2,3,6). While the literature states that labial synechiae is a frequent occurrence, prevalence of this condition in the pediatric population is uncertain (3). This pathology needs a careful examination as it can be easily missed or misdiagnosed as imperforate hymen and with the congenital anorectal anomalies of this region (16,17). Huffman reports the greatest incidence in girls 2 to 6 year old, while others note the highest frequency in infants less than 2 years of age (3). Leung et al. (11) found in a retrospective study (9070 patients) and a prospective study (1970 patients) that the

condition was not present at birth but subsequently developed in 35 infants (incidence 1.8%) with a peak incidence at 13-23 months of age. According to our data, the incidence is less than and peak incidence is at 4-6 months of age.

Current opinion about the underlying mechanism is the denuding of the upper squamous epithelial layer of the labial mucosa with subsequent formation of a connective tissue bridge between the healings labia. The critical question is why denuding of the upper layer occurs. There are many theories about the occurrence of labial synechiae. Low estrogen levels in the prepubescent girl, but this is a normal situation, may predispose to labial adhesions (3,6,7). Adequate endogenous estrogens change the vaginal epithelium from a thin atrophic lining to a thick one containing glycogen (3,11). In addition the neutral pH of the vaginal secretions in the prepubescent girl predisposes to inflammations and infection (3,7). The role of trauma in the development of labial synechiae has been previously explored. Eliciting a history of sexual abuse on the basis of the physical examination is dependent on the presence of abnormal genital and/or anal findings. However, no patient in our series had any of these conditions.

Leung and Robson et al. (10) reported that a urine culture be performed in children with labial fusion and that all girls with urinary tract infection should be checked for labial fusion. Others report an incidence of urinary symptoms with labial fusion from 20% to 50% (2,10,12,13). But urinary infections were detected in only two of the patients in our series (8%). Therefore, we believe adhesions of labia minora will keep these patients from fecal contamination; as a result urinary infection is experienced rarely in these patients.

In the infant, feces and urine in the perineal area, as well as occlusive diapers, may inflame the labial mucosa and lead to fusion (4). On the other hand, Vakar reported vulvovaginitis in 47% of his cases, although some of these had "physiologic desquamative vulvovaginitis" of the newborn infant. In this condition the neonatal mucosa is felt to be particularly vulnerable to invasion by stool flora (3). Children with seborrheic dermatitis

may experience recurrent vulvitis. Atopic eczema infrequently leads to inflammation of the vulva (3). But any patient in our series had evidence of either seborrheic dermatitis or atopic eczema.

In our study we found same findings with previous study that these lesions occurred in families with good socioeconomic and cultural status and especially in children of extremely attentive mothers, who tend to over clean their perineum (8,9). Overzealous mothers have cleansed them too much. According to our previous and new observations, we think that micro traumas like over cleaning, caused by mechanical mucosal injury of the labium, may lead to adhesion of labia minora (Table 1), (8,9).

In summary, this data suggests that in young infants, labial synechiae might be occurred secondary to vigorous wiping by their mothers, who are very concerned about their children's perineal cleanliness. Because our previous observations and this prospective study are critical about the occurrence of labial adhesion, we think that other prospective studies might be very helpful to have a scientific description and a definite conclusion of this pathology.

## REFERENCES

1. Altchek A: Vulvovaginitis, vulvar skin disease and pelvic inflammatory disease. *Pediatr Clin North Am* 1981; 28:397-431.
2. Baker RB: Dysuria: Presenting Complaint in labial fusion. *AJDC* 1986; 140: 1100-1101 (The pediatric forum).
3. Berkowitz CD, Elvik SL, Logan MK: Labial fusion in prepubescent girls: A marker for sexual abuse. *Am J Obstet Gynecol* 1987; 156: 16-20.
4. Capraro VJ, Greenberg H: Adhesions of the labia minora. *Obstet Gynecol* 1972; 39:65-69.
5. Christensen EH, Oster J: Adhesions of labia minora (synechia vulvae) in childhood. *Acta Pediatr Scand* 1971; 61:709-715.
6. Evroke C, Ozgunes FT, Kadayıfçı O, Atay Y, Demir C, Arıdoğan N: Labial fusion in a pubertal girl: a case report. *J Pediatr Adolesc Gynecol* 1996; 9: 81-82.
7. Glean JF: Labial fusion and urinary infection. *J Urol* 1962; 87: 485-486.

8. Celayir AC, Etker Ş, Karateke A: Is microtrauma due to overcleaning the real cause of labial synechiae? 13<sup>th</sup> International symposium on Pediatric Surgical Research, Ann Arbor-Michigan, 2000.
9. Celayir AC, Etker Ş, Karateke A: Aşırı perine temizliğine bağlı mikrotravmalar labial yapışıklığın gerçek nedeni midir? Türk Pediatri Arşivi 2001; 36: 106-108.
10. Leung AK, Robson WL: Labial fusion and asymptomatic bacteriuria. Eur J Pediatr 1993; 152: 250-251.
11. Leung AK, Robson WL, Tay UJ: The incidence of labial fusion in children. J Pediatr Child Health 1993; 29: 235-236.
12. Norbeck JC, Ritchey MR, Bloom DA: Labial fusion causing urinary tract obstruction. Urology 1993; 42: 209-211.
13. Wheeler RA, Burge DM: Urinary Obstruction due to labial fusion. Br J Urol. 1991; 67: 102.
14. Bacon JL: Prepubertal labial adhesions: evaluation of a referral population. Am J Obstet Gynecol 2002; 187: 327-331.
15. Nurzia MJ, Eickhorst KM, Ankem MK, Barone JG: The surgical treatment of labial adhesions in pre-pubertal girls. J Pediatr Adolesc Gynecol 2003; 16: 21-23.
16. Posner JC, Spandorfer PR: Early detection of imperforate hymen prevents morbidity from delays in diagnosis. Pediatrics 2005; 115: 1008-12
17. Takamatsu H, Noguchi H, Tahara H, Kajiya H, Kaji T, Ikee T, Yoshioka T, Akiyama H: Ano-urethral fistula, a special type of anomaly: report of two cases. Surg Today 1993; 23: 1116-8.