

Labial synechiae: a diagnostic conundrum

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Abstract

The purpose of this study was to shed some light on labial synechiae, which is a common yet unfamiliar condition seen initially by the family physician and ultimately by the paediatric urologist. It is often diagnosed incorrectly, leading to undue anxiety and stress for the unsuspecting parents, and results in multiple unnecessary lab investigations, hence, putting a burden on the healthcare system in general.

After IRB approval, a retrospective chart review was performed over a period of 15 years (2007-2021), at The Indus Hospital, Karachi, Pakistan. The records of all female children who underwent examination under anaesthesia (EUA) for labial synechiae (n=29) were included in the study. Our results indicate that the primary healthcare physicians were unable to recognise labial adhesions at the time of initial presentation.

We conclude that labial synechiae is a benign condition affecting female infants, but is not very well understood by healthcare workers in our part of the world.

Keywords: Prepubertal, labial fusion, paediatric urology.

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Introduction

Labial adhesions, also known as synechiae, are commonly encountered in the paediatric urology clinic with a reported prevalence of 1.8%.¹ By definition, this is an idiopathic, acquired partial or complete fusion of the labia minora, and is most commonly seen in female children aged three months to six years, as this is physiologically a period of hormonal dormancy.²

In our practice, there have been many instances where general practitioners and novice paediatric urology fellows have misdiagnosed this apparently benign condition as “vaginal atresia” or even worse, a diagnosis no parent wishes to hear — “ambiguous genitalia”.

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Materials and Methods

After IRB approval, a retrospective chart review was performed over a period of 15 years (2007-2021) at The Indus Hospital, Karachi, Pakistan. The records of all female children who underwent examination under anaesthesia (EUA) for labial synechiae were evaluated over a period of four months (January – April 2022). Patient’s personal information and other demographics were extracted from the medical records.

All patients were diagnosed as having labial synechiae, on the basis of a thorough inspection of the genital area. There was no evidence of dermatitis, physical trauma, or sexual abuse in any of the cases.

After written and informed consent was obtained from the parents/legal guardians, the patients underwent a swift examination under anaesthesia, where the labial adhesions were manually separated using well lubricated haemostatic clamps. In some cases, a small incision was made with the scalpel. The average procedure time was five minutes. The wound was cleaned and light dressing was applied, which was removed within the next six hours.

Data was collected on MS Excel. Statistical evaluations were performed using SPSS version 22. Descriptive statistics of the variables, such as frequency, mean, median, and standard deviation were analysed for quantitative data. Statistical significance was determined with the Chi-square test and Mann Whitney U test. P-value of less than 0.05 was considered to be statistically insignificant.

Results

From a retrospective chart review spanning over a period of 15 years (2007-2021), a total of 29 female paediatric urology patients were included in the study. They all had a final primary diagnosis of labial synechiae. Average age at the time of diagnosis was 2.76 ± 1.84 years. The commonest clinical presentation encountered is demonstrated in Figure I-A & B.

Of these, 23 (79.3%) patients were referred to Paediatric Urology after a thorough assessment by the Family Medicine team in the Filter Clinics. It is interesting to note the myriad of differential diagnoses given to this

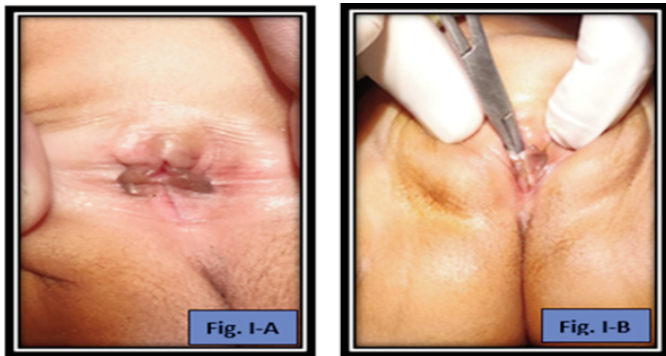


Figure-1 (a-b): Demonstrating the commonest physical presentation of labial synechiae, in one of our pre-pubertal female patients (four-years-old female child).

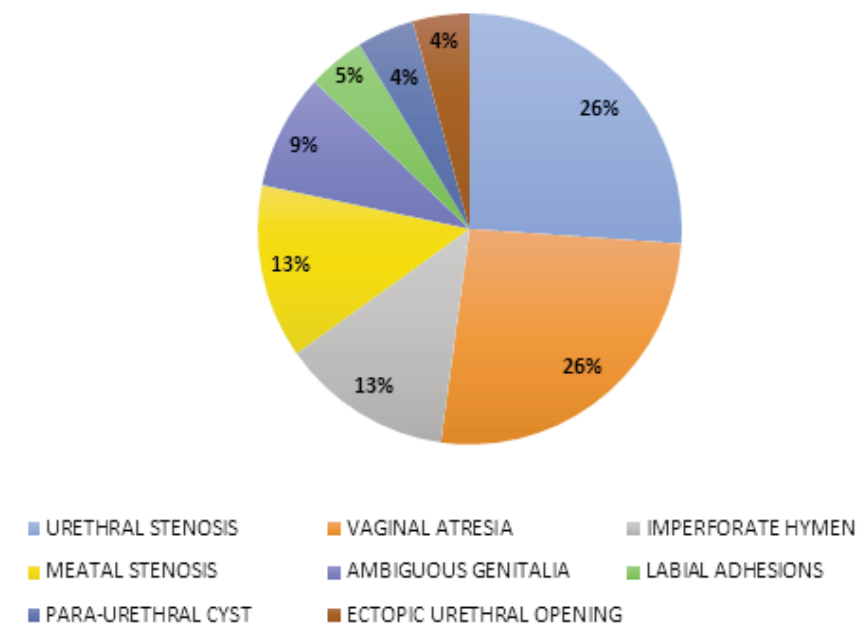


Figure-2: Labial Synechiae: Differential Diagnoses by Filter Clinics

seemingly benign condition, where the unsuspecting parents were informed that their child has urethral stenosis or vaginal atresia (6[26%]each), imperforate hymen or meatal stenosis in 3(13%) cases, ambiguous genitalia in 2 (8%) patients), a para-urethral cyst or ectopic urethral opening each in 1 (4%) patient (Figure-2). In spite of performing a thorough general physical and genital examination, almost none of the primary healthcare physicians were able to correctly diagnose labial synechiae.

Seven (24.1%) out of the total cases were seen directly by the paediatric urology team. When the dejected parents presented to urology clinics with a heavy heart, a

thought-provoking discovery was made—the novice paediatric urology fellows are equally unaware of this uncommon but absolutely benign condition. In 4 of these 7 cases, labial synechiae was misdiagnosed as “ambiguous genitalia” by four different fellows, all in the earlier part of their training.

One patient presented with recurrence within a year of her first presentation, and underwent the same procedure. She has had no issues ever since, and has remained on regular follow-up. This led us to explore the possible risk factors. Sixteen (55.17%) patients could not maintain good hygiene due to socio-economic factors, while mothers of 13 (44.8%) reported excessive cleaning and drying of the child’s genital region in an attempt to keep diaper rash at bay. However, the difference was statistically insignificant (>0.05). All other patients have remained well on regular follow-up, the average duration is five years.

From our experience of using only manual separation methods under general anaesthesia, it was concluded that there is no significant role of locally applied oestrogen creams, and manual separation is a quick, cost-effective and safe treatment modality for the affected female infants.

Discussion

Labial adhesion, also known as labial synechiae, is a condition in which there is fusion of the labia minora over the vestibule. It is not very well understood and is very frequently misdiagnosed or confused with an imperforate hymen or other more serious genital and anorectal malformations, as is also

indicated by the results of the current study.

It is an acquired condition, as the affected female infants are completely normal at birth. In a historic Canadian study conducted prospectively by Leung et al, an overall prevalence of 1.8% was noted.³ A thorough genital examination is essential.⁴

The aetiology of labial synechiae remains unknown. However, it has been suggested that oestrogen deficiency in these pre-pubertal infants may be an important underlying cause.

Which is the best and most effective treatment modality remains a controversial subject to date. A myriad of

treatment options is available, ranging from conservative management with topical application of oestrogen creams, or the minimally invasive surgical method of manual separation which results in immediate resolution and very low recurrence rates,⁵ as is also indicated by our results. It is our experience that manual separation ensures immediate therapeutic success, parental satisfaction, and is better tolerated than local hormonal therapy. Our data of approximately a decade and a half indicates that due to social pressures and limited understanding, most parents tend to opt for manual separation of the adhesions which is a swift, one stop solution. Nevertheless, it is very important to discuss all possible management options with the guardians, allowing them to make an informed decision for their child.

Based upon the age of the child at the time of presentation and parental wishes, manual separation can be performed in a number of ways: separation in the clinic after the application of topical anaesthetic is quite painful and not very easily tolerated by these little patients; an alternative method is to manually separate them in the operating room (OR) under general anaesthesia.⁶

Some studies recommend using topical oestrogen as the first line treatment, and these have a variable success rate between 50 to 90%.⁷ Hormonal therapy takes more time and comes with its own local side effects, along with the risk of premature puberty.

A Turkish study, conducted by Çağlar MK in 2007, showed no significant difference in the oestrogen levels of infants with labial fusion, when compared with the oestrogen levels of those without. The Turkish study concluded that hypo-oestrogenism is unlikely to be the sole cause of labial adhesions.⁸ Never having used oestrogen therapy for any of our patients, we reached the same conclusion, i.e. there is no role for oestrogen creams.

In a retrospective study conducted by Ellen Wejde et al, it was observed that manual separation of labial synechiae is a far more effective modality when compared with local oestrogen therapy both in terms of parental satisfaction as well as long-term follow-up results.⁹ In a multi-centre study, conducted in the USA in 2015, Bacon JL et al concluded that the latter is a far more reasonable option, considering the patients' demographics.¹⁰ As discussed earlier, in the current study, manual separation of all labial synechiae were performed in the OR under general anaesthesia and had good outcomes to report.

This study has certain limitations. It is a single centre retrospective data set, with a small sample size owing to the low prevalence of this condition. However, it is also the largest cohort of this condition being reported from our region, with a strong follow-up duration.

Conclusion

Our study is based on the commonest clinical presentation of labial synechiae. The report attempts to educate all healthcare workers who may encounter this pathology. We conclude that manual separation of labial synechiae is a safe and cost effective treatment modality with low recurrence rates, precluding the adverse effects of steroid or estrogen based creams.

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Conflict of Interest: None to declare.

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