

Manual Separation of Labial Adhesion in Pediatric Female Patients: A Five-year Experience

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ABSTRACT

Background: Sinequia vulvae or fusion of labia minora is a benign condition in female babies. It is thin fusion of labia minora. The fusion may be due to chronic irritation of the vulva and poor hygiene. It results in bacterial infection, dysuria, post void dripping, urinary tract infection (UTI) and urinary tract obstruction. Different treatment options are available for this condition. Manual separation is the treatment of choice in our set up. **Objective:** To study the results of manual separation of labial adhesion under local or general anesthesia (GA), with two months follow up. **Study Design:** Observational study. **Settings:** Department of Paediatric Surgery, Allied Hospital, Faisalabad Medical University Faisalabad. **Duration:** July 2014 to June 2019. **Methodology:** All female neonates and infants presenting with labial fusion without other anomalies were included in this study. Cases with other associated anomalies such as anorectal anomalies were excluded from this study. Informed consent was obtained from their parents. **Results:** There were 273 cases with age ranging from 04 weeks to 5 year. All were female babies. Separation of adhesions was performed with 1st follow up after 1 month. Twenty-six (9.52%) patients were lost during follow up period. There were 223(91.20%) patients had dissolved adhesions after 1st follow up. Twenty-four (8.79%) patients had recurrence and were re-operated. The success rate was 100% after 2nd follow up after one month. **Conclusion:** Manual separation of labial adhesion is a procedure of choice in our society.

Keywords: Labial adhesion, Labial fusion, Manual separation, Sinequia vulvae.

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INTRODUCTION

Fusion of the labia, labial adhesion, labial agglutination or sinequia vulvae in female babies is not an uncommon presentation in pediatric surgery.¹ It is a benign gynecological problem presenting as partial or complete fusion of the labia minora or majora in the midline.^{2,3} The incidence of this anomaly is 1.8% with a peak at 13 to 23 months of age (3.3%).^{1,3,4,5} These adhesions are sometimes attached with clitoris making it difficult to find an opening⁶. The vulva appears flat with central line of fusion. The urine dribbles posterior to clitoris. If adhesions are partial the central line of fusion would be visualized at posterior fourchette.⁷ The most frequently noted etiological factor is decrease in the estrogen needed for labial tissue strength in prepubertal period is no longer accepted now⁸. Other etiological factors include infection causing vulvovaginitis of labia minora, local trauma and irritation causing tissue damage and fibrinous exudate that leads to midline fusion of labia. Poor vulvar hygiene and history of sexual assault are also included in etiological factors. Local inflammation due to bacterial infection, threadworm infestation or a topical dermatitis may lead to labial adhesion.^{3,5,7,9} Labial adhesions may be mild, moderate and severe. Excessive use of soaps, foam baths, hip baths or other irritant substances, and even tight fitted cloths can be the triggering cause. Lichen sclerosis must be considered in the differential diagnosis.^{10,11} The symptoms depend on the extent

of labial adhesions. A complete fusion may result in incontinence (dribbling).¹² In some cases association with urinary tract infection (UTI) & urinary tract obstruction were noted.^{2,13,14,15} The proposed lines of treatment include observation, periodic follow up, topical treatment, manual and surgical separation.^{1,4,8,9,16}

OBJECTIVE

The objective of the study was to see the results of manual separation of labial adhesions under local or general anesthesia followed by topical antibacterial skin ointment application for three weeks, and white petroleum jelly for an additional one week.

METHODOLOGY

Study Design: Observational study.

Settings: The research was carried out in Paediatric Surgery Department Punjab Medical College (Allied Hospital), Faisalabad Medical University, Faisalabad. A retrospective review was done of the female patients who presented with fused labia to the Department of Pediatric & Neonatal Surgery in Allied Hospital Faisalabad during the study period.

Duration: July 2014 to June 2019.

Sample Size: 273 female patients including in the study were aged 0 weeks to 5 years.

Operational Definitions

Labial adhesion: Partial or complete fusion of the labia minora or majora in the midline.

Outcome: outcome is defined as initial successful treatment with totally resolved adhesion

Successful treatment: The complete resolution of adhesion with no recurrence after two months was registered as successful treatment.

Recurrence: It is defined as complete or partial recurrent adhesions.

Sampling Technique: Convenience sampling/Non probability consecutive sampling.

Sampling Selection

Inclusion criteria: All female neonates and infants presenting with labial fusion without other anomalies having symptoms of urinary obstruction, redness & itching in the local area were included in this study. Informed consent was obtained from their parents.

Exclusion criteria: Cases with other associated anomalies in the anorectal and genitourinary tract were excluded from this study.

Record Review: Patients record that got manual separation was reviewed. Age at the time of first treatment, initial success and recurrence was noted. The patients with no adhesion after 2 months of initial treatment were labeled as successful treatment. The information regarding topical application after manual separation was also noted.

Procedure: Local anesthetic agent xylocain 5% was applied 45 minutes before the separation. In some patient's sedation with midazolam (Dormicum) 50-100mcg/kg i/v 2-5 minutes before procedure along with local anesthesia was used^{4,10}.

In general anesthesia, propofol and Sevoflurane gas was used⁴. Standing on right side of the patient wearing gloves, thumb of right hand was placed on left labia majora of the patient and the left thumb on the right labia majora. Then force was applied in lateral direction till normal anatomy of the vulva was visible. It would take 1-2 seconds for complete separation¹⁰.

Post operatively Polymixin B skin ointment 1 ml was applied on the raw areas and vulva and the patients were advised to use it two times a day for three weeks. Then it was replaced with petroleum jelly 1 – 2 ml twice daily application for further one week^{4,6}. Outcome was analysed after one month by the same surgical team. Then it was reanalyzed on second follow up i.e. two months after the procedure. If recurrence occurred after 1st treatment, then second procedure for separation was performed in the same way and results were noted. Parents were advised to keep good hygiene of the area constantly.

RESULTS

During the study period a total of 35,788 patients visited in pediatric Surgery out patient's department (OPD). Out of those patients 273 (0.76%) presented with labial adhesions. The modes of presentation were, urinary tract infections and abnormal vulvar shape noted by mothers and grandmothers. Manual separation of 217 patients (79.48%) with labial adhesions was performed at the outpatient clinic under sedation

and local anesthesia. Fifty-six patients (20.51%) underwent manual separation under general anesthesia. Twenty-six (9.52%) patients were lost in follow up after initial treatment and were not included in analysis. There were 223 (91.20%) patients who had resolved adhesions at first follow up (Table 1).

Table 1: Manual Separation of Labial Adhesions (After 1st & 2nd follow up)

	N (%)
Total numbers of patients	273
Initial successful treatment (after 1 month)	223 (91.20)
Lost during 1st follow up	26 (9.52)
Recurrence (after 1 month)	24 (8.79)
Final success rate (after 2nd follow up)	24 (100)

Twenty-four (8.79%) patients came with re-adhesions. So 2nd manual separation procedure was performed. All patients came to outpatient department and were examined by the same team. The success rate after second procedure was 100%. All the parents of the patients were advised to keep the area clean with soap and water.

Side effects: No local adverse effects of Polymixin B skin ointment or white petroleum jelly were noted in the patients.

DISCUSSION

During the study period 35,788 patients visited pediatric surgery OPD. Out of those 273 patients were having labia adhesions. We performed manual separation procedure in all patients because of low socioeconomic and education level in our patients. They can't do medical treatment properly that would affect the results. The reported incidence of the disease by Barbosa ASD et al was 0.3-3.3% is comparable with our study 0.76%.¹ The peak age incident we found at the age of 12 months to 2 years 4% comparable with the study by Acer T et al was 3.3%.⁵ The initial success rate after separation of labial adhesions by Wejede E et al after one month of separation was 97% comparable with our study 91.20%. The recurrence rate in the same study was 28% but our rate was 8.79% because small population (n=30) of the study conducted by Wejde E et al⁴. Our final Success rate was 100% after 2nd labial separation but Wejde E declared 70% success in 2nd separation. Previous studies of manual separation of labial adhesions by Sover T et al, Eroglu E et al and Schober J et al report the initial high success rate as in our study.^{17,18,19} A similar high success rate after 2nd separation 100% in a small study group by Watanabe T et al. Those patients received topical antibiotic postoperatively and cleanliness during follow up was ensured as in our study.^{5,20} Barbosa ASD et al reported final success rate of 100% and recurrence of 10% comparable with our study i.e. final success rate of 100% and recurrence rate of 8.79%.¹ In our study we noticed that the patients who had thick labial adhesions and needed general anesthesia had history of urinary tract infection. Melek E et al noted the same thing in their study of labial

adhesions.¹⁵ Bussen S et al observed in their study an initial success rate of 100% after one month of separation, as compared with our study i.e. 91.20%. After 2 months of follow up the success rate was 96% but in our study success rate was 100%.¹⁰ The authors Watanabe et al & Thibaud et al in their study of manual separation of labial adhesions observed significantly high success rate better than other treatment options.^{20,21} Bussen S et al came to conclusion in their study that the primary manual separation should be offered to solve the problem in single treatment sitting.¹⁰ The topical treatment failure can be due to lack of continuity of the treatment by the parents in our set up. Recurrence can be avoided with good hygiene of the area along with the use of antibiotic ointment for prolonged time.^{4,5}

CONCLUSION

Manual separation is the procedure of choice in pediatric cases with labial adhesions in our set up. Recurrence can be avoided with prolonged use of ointment (Polymixin B) and good hygiene of the area.

LIMITATIONS

As this study is observational study, the education level of attendant of the patients is very low. It is not possible to suggest certain specialized precautions.

SUGGESTIONS / RECOMMENDATIONS

We suggest long follow up and multi central study. There is very few studies available in Pakistan so far. We recommend this observational study should be started in different Pediatric Surgery Units in Pakistan.

CONFLICT OF INTEREST / DISCLOSURE

There is no conflict of interest in this study. No funding was involved in this study.

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AUTHORSHIP CONTRIBUTION

Dr. Khalid Mahmood	Study Designing, Results & Discussion
Dr. Zahid Mahmood Nagra	Literature Review, Data Analysis, Reference Writing
Dr. Muhammad Bilal Khalid	Data Collection, Proof Reading, Manuscript Writing & Final, Formatting of the Article