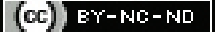


Labial Agglutination in Different Age Groups: A Case Series

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ABSTRACT

Labial adhesion or agglutination is varying degree of apposition between the labia minora which may be complete or partial. Here, a case series of five patients of different age groups ranging from toddler, prepubertal, postpartum and postmenopausal age groups were included. Most often, labial adhesions are encountered in prepubertal age group due to hypoestrogenic state. Parents most often diagnose incidentally while changing diapers. Similar hypoestrogenic environment encountered in postmenopausal state where in addition to apposition, women have co-existent genitourinary symptoms for which they seek care. Old people may be delayed in seeking care due to uncertainty. Labial adhesions among reproductive age group are quite rare. Most of the cases have a past history of trauma which was not adequately managed and the agglutination developed, as a remote complication. All the five patients were managed as per the severity of adhesions. Treatment included from conservative approach of oestrogen cream application to surgical adhesiolysis.

Keywords: Hypoestrogenic, Labial adhesion, Trauma

INTRODUCTION

Labial adhesions are quite common in prepubertal and postmenopausal age group. Worldwide incidence is not known, as the condition is mostly asymptomatic. Exact cause is not known but mostly oestrogen deficiency is a contributing factor [1]. Labial adhesions also known as labial synechia is mostly incidental entity in prepubertal and postmenopausal age group. Most often, it occurs around clitoris. Labial adhesion may affect up to 2% of prepubertal girls, with the typical age of presentation was two years of age [1]. Recurrent inflammation associated with infection and diabetes may be present with postmenopausal labial synechiae.

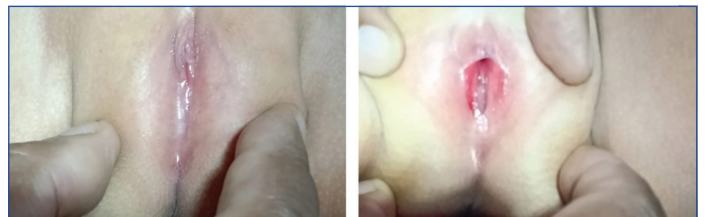
Adhesions in reproductive age group are associated with history of trauma during childbirth and such cases require surgical adhesiolysis. A study in 2007, measured the serum estradiol levels of 59 prepubertal females with labial adhesion and 60 prepubertal females with no labial adhesion showed no statistically significant difference in their oestrogen levels, hence, they were against the idea that labial fusion is due to a hypoestrogenic state [1].

History and clinical examination reveals that labial agglutination consists of thin fibrotic tissue, which can range from being a small partial fusion to a complete fusion occluding the vaginal orifice. Although infrequent, the complaints include dripping of urine, dysuria, itching [1]. Sometimes urinary tract infection may occur which is relieved on releasing synechiae. Preventive measures include maintenance of perineal hygiene and avoidance of irritant with proper glycemic control [1]. Labial adhesion is a clinical diagnosis and hence, does not require any laboratory investigations.

CASE SERIES

Case 1

The mother of a three-year-old toddler came in Gynaecology Outpatient Department (OPD) complaining of nappy rashes and itching around perineal region. She also complained of poor stream of urine for one week. Her mother recently noticed while bathing her that she is unable to separate the labial walls of the vulva [Table/Fig-1]. There is no history of such condition present since birth. On examination there was undue adhesion of labia minora hence occluding the vaginal opening which caused the poor stream of urine.



[Table/Fig-1]: Labial adhesions in a toddler of three-year-old.

On gentle retraction of the labia majora manually, the adhesion was separated after prior application of topical lignocaine jelly 2%. A topical application of oestrogen cream was advised. Estradiol 0.01% was prescribed to apply twice daily on the perineal region for four weeks. The mother was advised to maintain dry perineum following urination to avoid secondary infections on excoriated skin. The mother followed-up with the child after one month and on examination, the genitals appeared normal and she had no further complaints.

Case 2

A two-year-old girl was accompanied with her mother complaining about abnormal genitals of her daughter while giving her a bath. On general physical examination, the child was normal. On gentle traction of the labia with the examining fingers, the labia majora was separated [Table/Fig-2]. The mother was counselled about labial adhesion and advised to apply estradiol cream 0.01% locally everyday twice daily for four weeks. She later attended OPD after two months with no further complaints. On perineal inspection, there was no adhesion. She was asked to maintain perineal hygiene and attend OPD, if further problem arises.

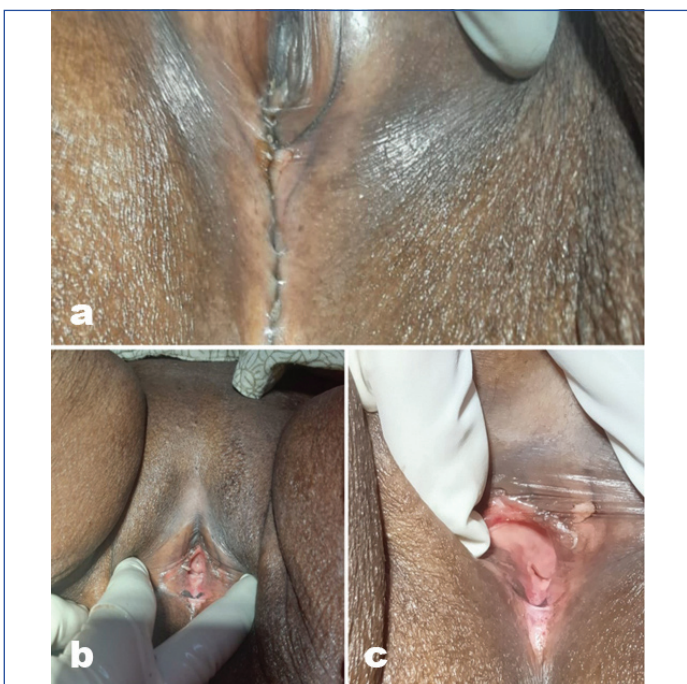
Case 3

A 65-year-old postmenopausal female patient P3+0, came with complain of burning sensation during urination for two weeks. She was normotensive, non diabetic of average built. All three of her children were delivered vaginally. She had no past surgical history. She noticed a change in her urine stream. During micturition, she noticed splaying of urine stream and dribbling after voiding. On gentle examination of perineum: both the labia majora [Table/Fig-3(a,b)] and minora [Table/Fig-3c] was found to be fused [Table/Fig-3]. She



[Table/Fig-2]: Posterior adhesion of labia majora in a two-year-old girl.

was examined in dorsal supine position and traction with examining index and thumb fingers was applied to manually dislodge the adhesions. The vaginal epithelium was atrophic with loss of rugosity and lubrication. The vaginal introitus was patent and cervix appeared normal on per speculum examination. After prescribing routine blood investigations and a urine for routine and microscopic examination, she was advised to apply premarin cream (conjugated equine estradiol 0.625 mg along the labia minora and vaginal mucosa twice daily for four weeks.



[Table/Fig-3]: Labial agglutination in postmenopausal women. (a,b) Showing adhesion of labia majora; (c) Adhesions of labia minora.

The patient followed-up after two months with no further complaints. She was advised to do routine exercise and maintain perineal hygiene.

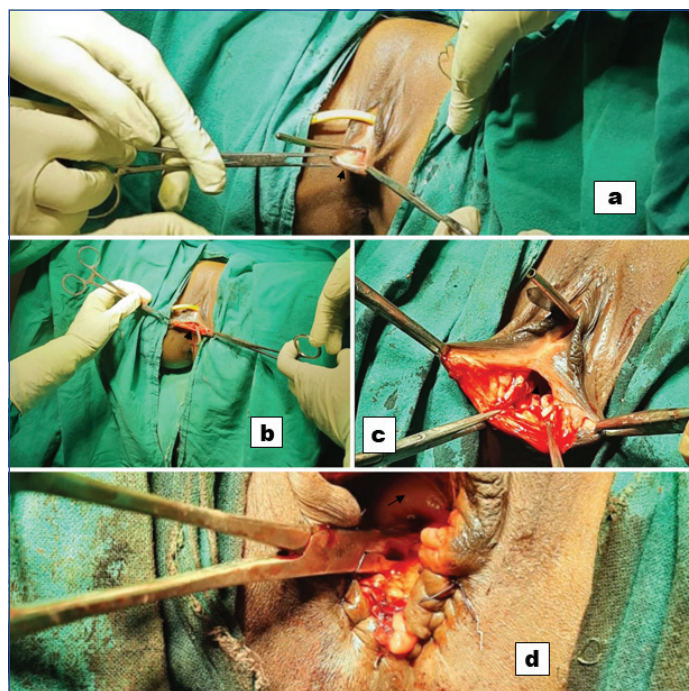
Case 4

A P1+0, 23-year-old female patient came with chief complaints of not able to properly participate in sexual intercourse since two years. Initially, shy and anxious, on investigation she revealed that the problem of apareunia developed following delivery of her only child two years back at home being attended by local untrained Dai. Following delivery she had an episode of bleeding from her genitalia for which she was advised to apply some ointment locally by general practitioner. The wound gradually healed and she was relieved of her bleeding episode and gradually recovered. She had lactational amenorrhoea for nine months. Thereafter, her menstrual

function returned initially irregular followed by regular cycles. She also revealed that she was unable to participate in sexual intercourse at all after delivery. On general and systemic examination, no major abnormalities were detected.

On local examination, the vaginal introitus was not visualised properly. Both the labia minora were fused hence occluding the vaginal introitus in posterior two-thirds of vaginal introitus leaving anterior one-third of the orifice patent. Per rectal examination did not reveal any collection in the vagina which ruled out haematocolpos [Table/Fig-4(a)]. Pelvic ultrasonography showed a normal shaped uterus without any evidence of haematometra or haematocolpos. Both the ovaries were found normal in shape and size, without any signs of pelvic endometriosis. After evaluating the clinical as well as haematological parameters and taking informed consent, surgical adhesiolysis was planned. Under general anaesthesia in lithotomy position, the operation was performed. An indwelling catheter was placed in the bladder [Table/Fig-4(a)].

A longitudinal midline incision was made in the agglutinated labia minora. Immediately, it was found that the agglutinated minora was just making a membrane like shield only at the level of vaginal orifice and the vaginal canal was absolutely normal exposing the cervix and fornices [Table/Fig-4(b,c,d)]. The scar tissue around the incision line was excised and the margins of the wound sutured with interrupted 2-0 synthetic delayed absorbable suture and the anatomy was reconstructed. A barrier was made of pre-sterile foam within a condom and was placed in the vagina to prevent approximation of the wound and was kept in-situ for three days postoperatively. This was done to prevent recurrence. After three days, the barrier and the indwelling catheter were removed and the patient was discharged on 5th postoperative day. The patient was under antibiotic coverage for seven days. A follow-up was done after one month and an absolutely normal functional vagina was observed.



[Table/Fig-4]: Postpartum adhesiolysis in a case of traumatic labial synechiae. a) Posterior vagina held with allis tissue forceps, metal dilator of size 6 inserted inside introitus checking patency; b) Transverse incision between the labia minora; c) Dissection of posterior vaginal epithelium from perineal skin; d) Cervix visible after widening of the introitus.

Case 5

A 29-year-old female patient, with a history of vaginal birth at home one year back came to the OPD with the complaint of painful intercourse. On further investigation, she narrated the delivery was conducted by a Dai. A small laceration near the introitus was left unsutured. She was advised to apply an antibiotic ointment. Months later, she noticed that she is no longer able to continue

intercourse with her husband and was feeling discomfort during the act. She was still breast feeding and her menstruation has not yet resumed. Surgical correction was planned after preanaesthetic fitness was approved.

In lithotomy position under spinal anaesthesia, after Foley catheterisation, the opposed labia minor was stretched using allis forceps [Table/Fig-5(a)]. The scar tissue was excised [Table/Fig-5(b)] and the labia minora was separated to visualise normal vaginal canal [Table/Fig-5c]. The wound margins were sutured with vicryl 2-0 and a vaginal toileting was done at the end of procedure. She was discharged after three days and the Foley was removed. On follow-up, the perineum was found to be healthy and a normal vaginal canal was restored.



[Table/Fig-5]: Partial labial synechiae following traumatic child birth. Right-side of picture showing adhesiolysis; a) Midline dense fusion of labia minora; b) Transverse incision between labia minora and dissection of posterior vaginal wall; c) Confirming vaginal canal patency by digital examination.

DISCUSSION

Labial adhesions (agglutination) are quite common in prepubertal years of girls, especially during the nappy years. It's a varying length

thin membrane fusion of the labia minora. It starts at the back of the fourchette and moves towards the clitoris. If the fusion is complete, the vaginal entrance is hidden. Because labial agglutination is not a developmental defect, it is not linked to any genital tract abnormalities [2]. [Table/Fig-6] describes the findings of different published studies/case reports [2-6].

The patient may experience physical and emotional trauma as a result of manual separation [5]. In case 1 and case 2, girl toddlers were calmed with the presence of her mother during the separation of labial manually. A retrospective study comparing medical treatment of oestrogen alone, betamethasone cream alone or combination of both for 2 to 4 weeks, showed no significant differences among the group [6].

The GSM of menopause is characterised by symptoms involving the vulva, vagina, and lower urinary tract, which are mostly caused by a decrease in oestrogen levels as women age advances [6,7]. In the literature, conservative treatment is recommended for patients of postmenopausal age with partial labial fusion, and only if this fails, surgical treatment is recommended [8,9].

Hypoestrogenism [10], vulvar inflammation related to local infection, irritation, trauma, vaginal herpes, lichen sclerosus [8,9], and absence of intercourse are all factors in the causation of labial agglutination. The adhesion may be partial or complete and generally moves upwards from posterior fourchette towards the clitoris. Most of the cases of postmenopausal adhesions are asymptomatic and are diagnosed during pelvic examination for other concurrent reasons [11].

Most of the cases are managed by topic oestrogen formulations. Medical treatments for genitourinary problems, such as topical steroid ointments for the treatment of vulvar lichen sclerosus or other inflammatory illnesses, may be used in combination with other drugs [12]. If a patient's response to medical treatment is inadequate, or if a scarred or thick adhesion exists, surgical separation is indicated [13].

Labial adhesions after childbirth are seldom mentioned in the literature. Significant perineal swelling, according to Lin Y et al., may increase adhesion development by mechanically pressing the labia together [14]. Topical oestrogen treatment cannot be suggested based on the current literature. As a first-line treatment for postpartum labial adhesions, surgical dissection under local anaesthesia should be attempted [14].

Published study	Brief abstract	Relation with the present study
Bussen S et al., [2]	Children <5 years of age a 4-week topical therapy with estriol is a promising therapy option for synechia of the labia that is less of a burden for the family situation. Especially for girls ≥5 years of age, primary therapy fails in up to 20% of the cases. Primary manual separation represents a more effective therapeutic option. Irrespective of the treatment applied, a recurrence after ≥3 must be expected in one-third of the treated girls.	The first two cases in the present study documents about two toddlers, wherein manual separation was effective and topical oestrogen therapy was helpful to prevent recurrences.
Pushpawati et al., [3]	Labial adhesinolysis under vaginoscopic guided approach using our standard hysteroscope light and camera was done [Table/Fig-2]. We approached through the only pin point opening using fine scissors cutting the adhesion bands from a dense adhesion present from the clitoris to the posterior vestibule.	In comparison to case 5 where labia minora was transected and then digitally confirmed about the patency of vaginal tract, in the present study they used vaginoscopy to confirm the patency of vaginal canal which appears a safe practice before transecting adhesion.
Wakode SR and Bhat VN, [4]	A 22-year-old primipara presented after 1.5 years of uncomplicated normal vaginal delivery with complaints of difficulty during intercourse. Examination revealed labial adhesion connecting both labia minora, Surgical division under anaesthesia resulted in successful complete recovery.	This case is similar to case 4 in the present study. With proper surgical dissection, restoration of vaginal anatomy was achieved.
Singh P and Han HC, [5]	This study reports six cases of complete labial fusion among postmenopausal women who presented with various urinary and vulval complaints. The mean age of these patients was 76 (range 61-85) years.	Case 3 in the present study comes with similar urinary complaints of pseudo incontinence. Patient was managed conservatively with manual separation and topical application of oestrogen cream.
Tanvir T et al., [6]	A case of 68-year-old postmenopausal women who presented with symptoms of urinary incontinence secondary to Complete Labial Fusion (CLF). Surgical correction and restoration of the labial anatomy with topical oestrogen lead to successful management.	Genitourinary syndrome (GSM) of menopause is due to hypoestrogenism affecting the vagina and lower urinary tract. Contrary to case 3, which was managed conservatively, the present study presents the surgical adhesiolysis required in a postmenopausal women presenting with pseudoincontinence.

[Table/Fig-6]: Comparison of the management and findings of the published literature with present case series [2-6].

CONCLUSION(S)

Labial adhesion or agglutination of varying degree occurs predominantly in prepubertal and postmenopausal age group. Topical oestrogen application is the main stay of treatment in non traumatic adhesions. In paediatric age group, suspicion of sexual assault has to be kept in mind and proper counselling of the parents to keenly observe any behavioural changes in the child, has to be done. Institutional delivery of all pregnant mothers has to be strengthen and proper postpartum follow-up to include perineum care instruction and postpartum exercises.

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