



Labial Adhesions Sharing our Experience Over Three Years

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Abstract

Introduction: Labial adhesions; also known as synechiae vulvae or labial agglutination, occur when the labia minora have become fused in the midline through either flimsy or thick adhesions, forming a central raphe. It is generally a pediatric condition but can occur during menopausal or reproductive age; is associated with local irritation and inflammation in hypoestrogenic state.

Materials and Methods: This observational study was conducted in three large hospitals over a period of three years. All the cases of labial adhesions who reported to any of these three hospitals were included in the study.

Results and Observations: Ten cases in total were encountered during the period of study. Seven were pediatric cases; two were postmenopausal and one was in reproductive age. After minimal investigations the babies underwent examination under anesthesia and labial separation was performed by gentle outward pressure. Two postmenopausal women came with pruritus vulvae and burning micturition. The series included one case 24 year's old unmarried woman.

Discussion: Both labia minora on either side remain separate throughout woman's life for discharge of secretions and sexual intercourse but in some situations the two labia minora usually and labia majora rarely get fused. It is not so rare among children but is infrequent in the elderly. The incidence of labial fusion in the general population is unknown. Usually asymptomatic but when symptomatic; the symptoms are related to urinary system. The diagnosis is clinical; there is hardly any need for detailed investigations.

Asymptomatic cases do not require any treatment except explanation and reassurance especially to parents. The accepted mode of treatment of labial adhesions is local estrogen application or separation of adhesions surgically. There are potential side effects of every kind of treatment resorted to.

Keywords: Labial adhesions; Separation; Local estrogens

Introduction

Labial Adhesions (LA); also known as synechiae vulvae or labial agglutination, occur when the labia minora get fused in the center by flimsy or thick adhesions, forming midline fibrous ridge. The adhesions are generally partial but may be complete, of the labia minora or majora. It is usually a pediatric condition [1] predominantly encountered among children; however, there have been cases reported in the literature of labial agglutination in postmenopausal and reproductive aged women [2,3].

The labial adhesions when occur in children; only the labia minora is involved whereas adhesions of majora may occur in postmenopausal women. These adhesions are related to local irritation and inflammation at an age when estrogen levels are low [4]. Other postulations of adhesions are thinning of the vulva, lack of good and proper hygiene, lichen sclerosis, vulva coming in touch with urine, local infection, and physical irritants [5]. Most cases do not have any symptoms and are detected incidentally by a parent or at the time of routine clinical evaluation. Some patients may present with symptoms involving urinary tract like dysuria, increased frequency; inability to pass urine or dribbling [3]. Labial agglutination is not common and expresses often as evacuation problems which are nonspecific; yet it can be diagnosed easily on external appearance and effectively treated by surgery with or without medications applied locally either before or after surgical intervention.

We present a series of cases of labial agglutination in various age groups encountered over a period of three years in three large hospitals. This was an observational study hence no interference

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was made in the management.

Materials and Methods

The study was conducted in three large hospitals over a period of three years. All the cases of LA who reported to any of these three hospitals were compiled and studied. Their demographic parameters were collected and studied. Our case series was compared with the existing literature.

Results and Observations

Ten cases in total were encountered during the period of three years. Seven were pediatric cases; age varying from 23 to 51 months, two were postmenopausal (64 and 67 years) and one was in reproductive age (24 years). Six pediatric cases were brought by the parents as they noticed that the external genitalia were not appearing normal. One pediatric case was referred by another doctor as a case of 'Intersex' after full and detailed investigations like MRI pelvis, chromosomal studies and endocrinal profile. None of the parents mentioned any complaint like difficulty in passing urine or crying while passing urine etc. Five babies were born in hospital and two were born at home. Antenatal period of the mothers was unremarkable. History of any medication other than routine medications during pregnancy was denied, two cases were cesarean births and rest all were normal deliveries. Two were first born babies. There was no significant family history.

All seven cases were examined in the outpatient department and it was noticed that the labia minora had got fused in the midline to a variable degree. Parents of all the babies were counseled and explained about the choice of local medication or surgical separation under anesthesia. They all were anxious and felt that their babies had abnormal external genitalia and wanted to confirm the normalcy of the genitalia at the earliest. No per rectal examination or any imaging studies were performed to avoid discomfort to the babies and anxiety to the parents. After minimal investigations as advised by anesthesiologist the babies underwent examination under anesthesia and labial separation was performed by gentle outward pressure (Figure 1,2). Show two cases before and after separation under anesthesia. All pediatric cases were advised local application of estrogen cream and regular follow up. All parents felt relieved and happy on finding normal external genitalia under the adhesions. These cases are under follow up for a variable period till publication of the paper and have no recurrence. Parents were explained about vulval hygiene maintenance and spontaneous recovery at the onset of puberty.

Two postmenopausal (Figure 3) women presented with pruritus vulvae and burning micturition. On examination, they showed vulval adhesions and when asked about coital problems, both denied any sexual activity. Standard investigations including urine culture did not show any abnormality. They were prescribed local estrogen



Figure 1: Labial adhesions before and after separation in a pre-pubertal girl.



Figure 2: Labial adhesions before and after separation in a pre-pubertal girl.



Figure 3: Labial adhesions resulting in complete obliteration in a postmenopausal woman.



Figure 4: Labial adhesions resulting in complete obliteration in reproductive age woman.

application and felt better after two to three weeks but there was no change in the appearance of external genitalia. They did not want any further intervention as they felt subjectively better. Local application and maintenance of vulval hygiene was followed. Both are still under follow up without any fresh complaints.

One 24 year's old unmarried lady reported to the outpatient with complaints of white discharge per-vaginum and intense itching of external genitalia. She was passing urine without any difficulty but complained that the stream of urine was not normal. Her menarche and menstruation were normal. Local examination of external genitalia revealed complete labial adhesions, urethral and vaginal openings were not visible (Figure 4). There was a small opening posteriorly. Pelvic sonography was normal including post void residual urine (Figure 5). After pre-anesthetic evaluation and one course of antifungal, antiprotozoal and antibiotic therapy she was posted for surgical separation. A small catheter was introduced through the narrow opening as a guide (Figure 4) and thick adhesions were separated by blunt and sharp dissection. Fine 3-0 polyglactin sutures were applied all around (Figure 6) and her external genitalia



Figure 5: Normal sonography of reproductive age case.



Figure 6: Normal external genitalia after surgery.

regained normal appearance. She was discharged after five days of surgery with advice to maintain local hygiene. Blood sugar studies were normal.

Discussion

Both labia minora on either side remain separate throughout woman's life for discharge of secretions and sexual intercourse but in some situations the two labia minora usually and labia majora rarely get fused. This kind of fusion has been labeled as labial adhesions or labial agglutination¹, also called labial synechiae or fused labia. The fusion that occurs in midline may vary from flimsy or tough adhesions, sometimes forming a fibrous band. It is generally found in pre-pubertal girls. Some cases have been documented in postmenopausal and reproductive age groups as was observed in our case series. This clinical condition generally occurs along with local irritation and inflammation in the milieu of hypoestrogenic state. Most of our cases were in hypoestrogenic stage like prepubertal or postmenopausal [2,3,5,6]. Cases of LA have also been documented following child birth [7]. It is theorized that breastfeeding stimulates the release of prolactin which leads to decrease in estrogen level, resulting in hypoestrogenic state. The trauma during vaginal birth in the presence of low estrogen state; makes the genital area more prone to irritation and inflammation, which may result in adhesions formations of variable degree. The risk of fusion increases when there is history of diabetes mellitus, lichen sclerosis or diminished frequency of intercourse [2,3].

Poor genital hygiene and contact with feces may be the causative factors for inflammation. One study reported chronic and acute inflammatory changes on histopathology of labial biopsy in two cases, indicating that inflammation may play a key role in the background of a hypoestrogenic state to cause agglutination [3]. It is believed to be by some that labial agglutination could be an early stage of lichen sclerosis [8,9].

In contrast to the pediatric population in which the adhesions formation is usually limited to the labia minora, the postmenopausal women may show the involvement of the labia majora also. Sometimes adhesions are so severe that only a small pin point opening is present (Figure 4) through which urine is passed; vagina fills with urine causing urocolpos and dribbling. Some patients may even present with acute retention of urine.

LA is not sporadic in young girls but is encountered sometimes in the elderly [2]. Its incidence in the general population is not known, but it has been reported to occur in 0.65% of children [6,10]. The probable LA frequency in girls is said to be around 1.8%, with a peak of 3.3% at 13 to 23 months of age [11]. The peak incidence at this age might be the result of the combination of low estrogen level in children and irritation of skin caused by nappy use. Thinned out layer of epithelial cells exfoliate and apposition of the denuded areas can result in LA [11]. It is rare in adult women, particularly in reproductive age, but is infrequently detected in postpartum and postmenopausal period [12]. One study reported the prevalence of LA as high as 38.9% in pre-pubertal girls, including very small adhesions of 2 mm or less detected only through the colposcopic examination [8].

LA can be asymptomatic, especially in pre-menarchal girls, resulting in inaccurate incidence and prevalence estimation. Usually the condition is incidentally discovered by parents while bathing or changing nappies as happened in our pediatric age group cases [13]. When symptoms occur, they are usually related to lower urinary tract like evacuation difficulties, dysuria, altered urinary stream or retention of urine. This retention occurs above the adhesions; which in turn predisposes to vaginal or urinary tract infections [14]. The commonest place for the adhesion's formation is close to the clitoris (Figure 1,2). The labial adhesions may range from small partial fusion to complete fusion at times occluding the vaginal orifice (Figure 4).

In elderly women, LA may cause dyspareunia⁵, urinary tract infection (UTI⁰), hematocolpos, urinary incontinence, deviation or obstruction of urinary stream and less often may be associated with pyosalpinx [3]. These can result in ascending infections.

LA is not a developmental anomaly and hence not associated with anomalies of the genito-urinary system. Some patients have complained of watery vaginal discharge which is due to collection of urine in the vulval vestibule or vagina. One should be aware of child sexual abuse causing LA [9,15]. When LA develops during the reproductive age, there may be history of some kind of genital tract injury or irritation to the genitalia in the form of childbirth, sexual abuse or genitourinary surgery.

One of the real risks of long-standing labial LA; more so among postmenopausal women; is inability to assess pelvic organs especially for malignancy. Hence after separation of adhesions a thorough and complete assessment of the reproductive organs should be done. This point was reiterated by Julia et al. [16] where in genital malignancy was detected in a 72-year-old woman with labial fusion who presented with a paraclitoral seborrheic cyst.

Diagnosis is usually clinical and there is hardly any need for detailed investigations like imaging or chromosomal studies as was done in one of the pediatric cases in our series. LA should be differentiated from congenital deformities, which can easily be done by presence of a midline raphe. The differential diagnosis should include hymenal skin tags, imperforate hymen, introital cysts, Mayer-Rokitansky-Kuster-Hauser syndrome, ureterocele, urethral prolapse,

vaginal atresia and vaginal rhabdomyosarcoma. This can easily be done by careful history and detailed clinical examination.

For the parents to notice such a condition in their child is definitely worrisome. Most of them are not convinced with the conservative treatment offered to them and demand prompt cure [17]. Therefore; it is important to make them understand the fact that if the patient is clinically asymptomatic, there is no requirement for treatment. Initial management of every case is reassurance as most of the adhesions resolve naturally with time or with onset of puberty. It is reported that up to 80% resolve spontaneously without any treatment [18-21] before puberty as estrogen levels increase and the vaginal epithelium becomes multilayered and cornified. However, following are the options of managing labial adhesions

- Blunt or sharp separation with local, regional or general anesthesia
- Manual separation without anesthesia
- Topical estrogen
- Topical steroids
- Oral estrogen

Treatment may be required in symptomatic cases like UTI. Today, the accepted modality of treatment of LA is local estrogen application. Topical estrogen cream application over the areas of adhesion is effective in 90% of patients [22,23]. At present no clear guidelines are available regarding exact duration of treatment; hence it should be for shortest possible period. Local therapy is usually advised once or twice daily for four to six weeks. Some have advised local treatment up to three months; cure rate vary from 47% to hundred percent subject to frequency and duration of treatment [11,24-26].

One study documented the superiority of local steroids like betamethasone over estrogen cream in preventing recurrence, with fewer side effects 10 with very high success rate (68%) and not so high recurrence rate (23%) in a follow-up for two years.

Non-responders can be managed surgically; local treatment for some weeks is suggested prior to surgical intervention. Quick separation with no anesthesia should be avoided as this can be very uncomfortable and painful. If manual separation is required, topical application of estrogen and/or steroids is recommended so that both labia heal separately without adhesions formation [5]. When labia minora are totally fused, resulting in urinary outflow obstruction or vaginal obstruction, then separation should be done surgically. Sometimes one may need to suture the edges of skin using 3-0 polyglactin sutures in an interruptive way [27]. Similar protocol was followed in our case too (Figure 6). It is reported in literature that among 289 cases of LA in prepubertal girls, 138 were subjected to separation under regional anesthesia and it was successful in 112 (81%) [24].

The different treatment protocols have their own potential side-effects. Sometimes local estrogen application has caused vulval pigmentation, erythema, fine downy labial hair and breast tenderness or transient breast enlargement [28,29]. Though very rarely, even vaginal bleeding has been reported. Enough data is not available regarding long term adverse effects of local estrogen use in children; hence it should be used for minimal duration that will result in effective treatment. Betamethasone use may cause thinning of the skin and increased risk of infection of the hair follicle, redness,

thinning of hair and local itching.

Surgical separation is also not without side effects as it can result in formation of fibrous tissue and thicken the adhesions [2,6,7]. Parents and care givers must be counseled about benign nature of the condition, the causative mechanisms and spontaneous resolution [30]. They should observe for signs of urethritis, UTI and for recurrence of LA [13]. The application of estrogen should be precisely on the adhesions to reduce side-effects. Different authors have reported different recurrence rates varying from as low as 11% to 14% to as high as 41% [11,24-26,29]. Recurrence after treatment is independent of the mode of treatment, but it can be prevented by good hygiene habits and practices. There is always a risk of repeated recurrences till attainment of puberty. Recurrences may be managed medically or surgically. Some additional procedures, such as the application of silicon film or hydrocolloid dressings or rotational skin flap grafting from the thigh may be undertaken, especially in refractory cases [32]. With the purpose of having uniformity and standardization of treatment; Mirzaman et al. [33] conducted a study to determine the subtypes of the LA and assessed the treatment results in each subtype.

Conclusion

Reassurance, counseling and education of parents regarding benign nature of the condition, role of local hygiene in causation and prevention of LA is important. Even though topical estrogen is the most commonly used, studies have not shown a statistically significant difference between topical estrogen and steroids. Because there have been no studies on adverse effects with long-term use of topical estrogen in the pediatric population, the recommendation is to use topical estrogen cream for the shortest duration as possible that will provide effective treatment.

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