

The management of fusion of the labia minora pudendi in adult women using a radiosurgical knife

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Summary

Fusion of the labia minora is a rare event in adult women and rarely seen as a clinical entity. We present a case of a 30-year-old woman with labial fusion, unmarried, a virgin, and sexually inactive with the complaint of discomfort during menstruation and difficulty in micturition since her puberty. The labia minora were fused in the midline with a pinpoint aperture for draining urine, while the clitoris could not be visualized. Previous history regarding a causal factor was perineal trauma in childhood. Effective surgical resection to separate the fusion was done by a radio frequency surgical knife. After the surgical separation, it was possible to expose the normal hymen behind the previously fused labia. We have shown that the separation of labial fusion in adult women with a radio frequency surgical knife, associated with topical application of estrogen cream, prevents re-fusion of the labia and leads to healing without scarring of the vulva.

Key words: Labial fusion; Perineal trauma; Radio-surgery.

Introduction

Labial fusion is a condition defined as partial or complete adhesion of the labia minora. Adhesions between two labial folds as a clinical entity can also be called: labial adhesion, vaginal synechiae, adhesive vulvitis of the labia, and labial agglutination, occlusion of the vulvae, vulvar fusion and vulvar atresia. This clinical condition usually affects children (three months to six years). It has been reported to occur in up to 1.8% - 5% of prepubertal girls. The peak of incidence is between one and two years of age [1].

Labial fusion is not a congenital lesion and the possible causal factors are thought to be inflammation, irritation due to rash, low estrogen status, nonspecific vulvitis, and repeat urinary infections. All of these can cause denudation of the labial superficial layer, which in turn heals by fibrosis which causes adhesions [2, 3]. The other most common causal factor of labial adhesion is long-term health consequences of female genital mutilation (FGM) [4]. Labial adhesions in childhood can often resolve spontaneously and the resolution has been reported in many cases within one year of diagnosis. The primary treatment for labial adhesions in infants is topical application of estrogen cream to the labia minora [5]. However, following the initial successes, nearly 20% of patients successfully treated with estrogen cream experienced a recurrence of labial fusion [6]. The surgical approach usually consists of an incision and sharp dissection through the fused line and primarily closing with thin sutures [7].

Case Report

In November 2009, a 30-year-old female was admitted to the reproductive unit at our clinic. She complained of discomfort during menstruation and difficulty in micturition since her puberty, and was also concerned about the unusual appearance of her external genitalia. She was unmarried, a virgin, and sexually inactive. This was the first time she visited a gynecologist. She confided to us that her mother told her that she suffered a trauma in the genital region in childhood, when she was less than five years old. Her complaints and discomfort during menstruation and difficulty in micturition had been present since her menarche. The onset of thelarche and pubarche had been normal at the age 11. Menarche occurred when she was 12.5 years of age. This patient had normal female secondary sexual features. Levels of gonadotropins, estrogen, and androgen were normal. Genital inspection revealed a normal mons and hair distribution, but the whole introitus was covered with a very thick skin fusion spreading between the labia majora. In the midline, there was a pinpoint hole measuring approximately 5-7 mm in diameter. The clitoris could not be visualized (Figure 1a and 1b). On rectal examination, the uterus was found to be normal in size, anteverted, and uneventful. Bilaterally the adnexa were normal. In the Douglas cul-de-sac and vaginal fornix a small amount of fluid was palpated, but the patient did not complain of any discomfort or pain. Transabdominal ultrasonography (US) with a full bladder was performed two or three days after her menstrual bleeding stopped. US revealed a normal anteverted uterus 12 x 9 x 6 cm in size and the uterine cavity was filled with some quantity of hypoechogenic content. The right ovary was found to be 29 x 22 x 10 mm in size, while the left ovary measured 30 x 25 x 14 mm. The US of the Douglas cul-de-sac indicated that there was some quantity of free-flowing fluid. In the upper third of vagina there was also some quantity of flowing fluid. The patient was admitted with the diagnosis: Total vestibular vulvar atresia, Fusionis labialis minora pudendi, Hematocolpos. Considering how the thick adhesions occluded the vaginal vestibule so completely, we believed that the best treatment would be surgical repair under general anesthesia, separating the fusion and opening the vaginal vestibule by a radio frequency surgical knife (SURGICAL RF UNIT, 150A, 4 MHz/ 5.8MHz, South Korea). Under

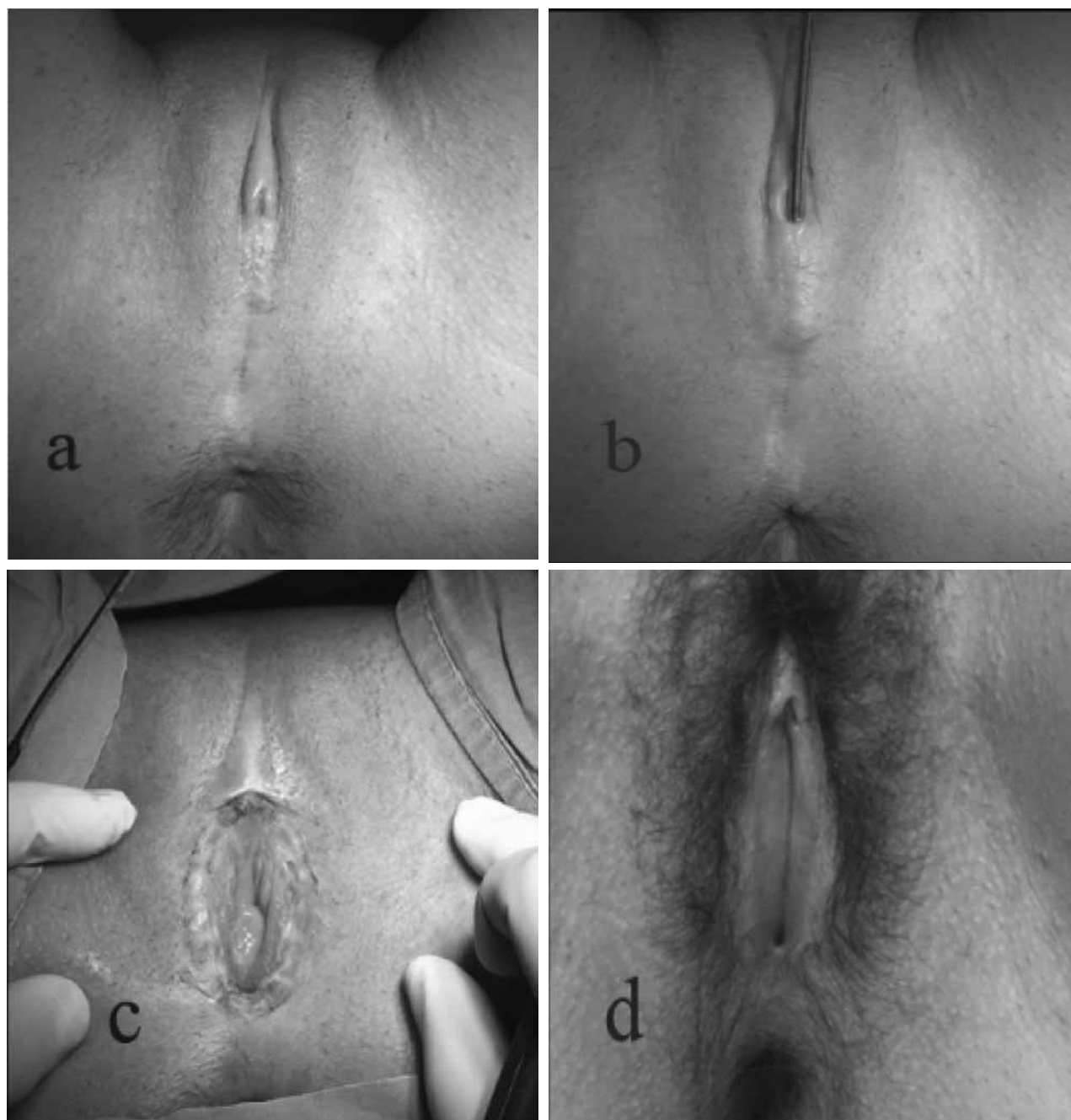


Figure 1. — a) Thick skin fusion covering the whole introitus spreading between the labia majora covering the entire clitoris. b) The pinpoint hole in the upper part of the fusion (shown by a dilator) for draining urine. c) Operative wound at the end of the procedure. d) External genital organs one year postoperation.

general anesthesia and after adequate preparation of the operative field, incision was performed initiating from the upper aperture, cutting through the middle line, with the guidance of a metal dilator passed towards the lower end of the fusion. In order to have an adequate surgical result with almost no bleeding and minimal thermal damage of the tissue, we used 3.8 MHz radio frequency. The adhesions at the clitoris were also dissected and the clitoris became visible. At the end of the procedure, the vaginal vestibule was visible with the intact hymenal ring and urethral aperture. At the end of the operation

an amount of hemolyzed blood was drained through the hymenal ring and the operative field was not bleeding (Figure 1c).

The cutting edges were not reapproximated with the suture but were left free. Immediately after the operation vasseline - antibiotic gauze (Stanicid gauze 10 x 10 cm, Hemofarm) and estrogen cream (Dienestrol cream 0.01%, Ortho) were applied to the wound. This topical treatment was continued over the following five days. The postoperative period was normal. On the fifth postoperative day the patient was discharged. She was

advised to apply estrogen cream directly with her fingers twice a week, without dressing the wound, and to apply an ointment of Hyperol (Hyperol cream, Meditop, Hungary), every other day for the next two weeks. Two months after surgery at the medical check-up, it was evident that the wound healed per primam and that it was completely covered with young skin. Appearance of the external genital organs seemed to be almost normal. At a further check-up in December 2010 the genital organs appeared completely normal, without evidence of scar tissue formation. Furthermore the patient was not complaining of any difficulty in micturition (Figure 1d). The patient was happy and satisfied with the surgical result and in the end, sought medical advice on the most suitable contraceptive method she could use.

Discussion

Labial adhesions are usually easily and simply diagnosed by physical examination and medical history based on symptoms. The symptoms of labial adhesions in children are most commonly manifested by the dribbling urine after going to the toilet, or in some cases there may be some vulvar soreness after urinating. The inner lips are joined together, while the perineal region is usually painless although some patients report some vulvar soreness. The exact cause is unknown, but it is strongly suspected that labial adhesions are caused by irritation to the external genitals, though it is not a congenital lesion [8]. If treatment is necessary, based on symptoms or parental request, estrogen cream is indicated. The primary treatment of labial adhesions is application of estrogen cream directly on the labia minora. Estrogen vaginal cream is applied to the adhesions two to three times daily for two to four weeks [9]. The success rate of topical estrogen intervention in girls with labial adhesions is typically about 90%, with published success in case series reports ranging from 46.7-100%. The use of steroid betamethasone (0.05%) cream has also been described. Once the labia separate, an emollient or antibiotic ointment is applied three to five times a day for several months to allow complete healing and prevent recurrence. Recurrence of labial adhesions is a common complication and has been reported in as many as 11.6-14% of cases [9]. The spontaneous resolution and high percentage of successfully treated patients with labial adhesions early in childhood ensure that this clinical condition rarely presents in adult women [10]. In addition, labial adhesions can occur under the influence of factors related to non-specific or specific inflammatory skin conditions, poor local hygiene or absence of sexual activity [11, 12]. The symptoms of labial adhesions in adults are most commonly manifested by difficulties with micturition, menstruation, and sexual activity. Patients usually come to gynecological consultation because they recognize, by personal examination, that the organs are unusual. The external genital organs of these patients show normal mons and hair distribution, but the whole introitus is covered with a thick skin fusion spreading between the labia majora. The physician should check that other genital abnormalities such as imperforate hymen, do not

cause difficulties. This clinical condition in reproductive women is very uncommon, especially if it is caused by perineal trauma in childhood [12]. We have presented a case of a 30-year-old woman with labial fusion. She had a trauma in the genital region in childhood when she was less than five years old. She had had a history of discomfort during menstruation and difficulty in urination since her puberty. Because the thick adhesions occluded the vaginal vestibule so firmly, we decided that the best treatment would be surgical repair under general anesthesia. In these clinical conditions, separation of firmly fused labia minora in an adult patient, is usually performed by classical surgical knife or using electro dissection. Simple surgical resection, however, may cause re-fusion and scar deformities [13]. Using electro dissection, the thickness of the thermal damage zone correlates with the power used and the speed of the electrode movement. Radio frequency surgical knife compared to conventional electro surgery is performed at much lower frequencies (about 0.3 MHz), has less lateral heat spread during the cutting procedure, and results in a thinner thermal damage zone. These were the two main reasons why we decided to perform separation of the fusion and to open the vestibule using a radio frequency surgical knife at a frequency of 3.8 MHz. By this approach, we got straight edges and there was no excess tissue. The cutting edges were not reapproximated with the suture and the edges were left free, which is in contrast to the way this operation is usually performed. Immediately after the operation, the wound was covered with vaseline-antibiotic gauze (Stanicid gauze 10 x 10 cm, Hemofarm) and estrogen cream (Dienestrol cream 0.01%, Ortho) was applied. Covering the wound immediately after the operation with vaseline-antibiotic gauze and estrogen cream ensured that the wound healed by covering with young skin without scarring [14].

This was confirmed two months after the surgery at the medical check-up. It was observed that the operative field was covered entirely with young skin and neither scars nor the deformity of the vulva were visible. The appearance of the external genital organs seemed to be almost normal.

Conclusion

The surgical approach and management of severe labial fusion in adult women by a radio frequency surgical knife was proven effective. Covering the wound immediately after operation with vaseline-antibiotic gauze and estrogen cream prevents refusion of the labial and leads to healing without scarring of the vulva.

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