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Labial Fusion Causing Voiding Difficulty and Urinary Incontinence

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EDITORIAL COMMENT: *We accepted this case for publication because it gives a good account of urinary problems due to extreme labial agglutination in a postmenopausal woman. The editor was the Senior Gynaecologist in the Repatriation General Hospital, Melbourne from 1976 to 1996, where he saw a number of elderly women with partial labial agglutination. Occasionally, when the condition was more extreme, the patients presented with spraying of the urine when the urinary stream hit the bridge of fused labia minora. However the editor has not seen a patient such as the woman reported here who required surgery, possibly because of routine administration of oestrogen cream to the vagina in these women. One would imagine that the process of urination would maintain a degree of labial patency in these women! It is an unfortunate fact that, even in major teaching hospitals, gynaecological conditions that are dealt with purely on an outpatient basis are never coded and so it is virtually impossible to do a hospital audit on the prevalence of these so-called 'minor' gynaecological disorders. This probably applies to agglutination of the labia minora in asymptomatic, elderly, postmenopausal women.*

Labial fusion is defined as either partial or complete adherence of the labia minora (1), and has also been called vulvar fusion, adhesions of the labia minor, agglutination or conglutination of the labia minora and synechiae of the vulva. The finding of severe labial fusion is rare with a small number of cases reported in adults. We have reviewed the literature on labial fusion and present a case report of a postmenopausal woman who presented with voiding difficulty and incontinence and was treated by surgical division of the adhesions followed by local application of oestrogen cream.

CASE REPORT

An 88-year-old para 2 widow was referred with a 2-year history of symptoms of voiding difficulty and postmicturition dribbling. Her urinary stream was slow and she had to manually press abdominally on her bladder to void. Urinary leakage occurred following micturition and she had to wear sanitary pads constantly. She was not sexually active. Her past history included 2 spontaneous vaginal deliveries and a Manchester repair in 1980. She had been referred to a urologist 1 year previously with urinary symptoms and had a cystoscopy. Examination under general anaesthetic at that time revealed labial fusion. Although the introital opening was enlarged by dilatation to 1.5 cm, her symptoms returned 1 month postoperatively.

Examination of the vulva revealed that both the labia minora were united to each other in the midline. The labial adhesions extended from the posterior fourchette to the region of the clitoris covering the vaginal introitus, urethral meatus and clitoris. The rest of the vulva appeared atrophic (figure 1). A 2 mm hole was present in the clitoral area and only admitted a size 8 French probe.

Under a general anaesthetic the labia were separated by sharp dissection along the line of labial adhesion to restore normal anatomy (figure 2). A small Fenton procedure was performed to enlarge the introital opening. Oestrogen cream was applied to the vulva postoperatively by the patient in an attempt to maintain introital patency.

She was seen 6 weeks postoperatively. Her urinary symptoms had resolved. Local application of oestrogen cream had been occasionally performed and the labial were again fusing in the midline. These adhesions were easily broken down digitally and our previous instructions were again emphasized.

A computer search of medical records at the Royal Women's Hospital and Mercy Hospital for Women, Melbourne between 1989 – May 1999, as requested by the editor to establish the incidence of severe labial fusion, revealed 1 other case: – An 88-year-old woman referred in 1997 with a tender cystic vulval lesion which had ruptured spontaneously a few weeks

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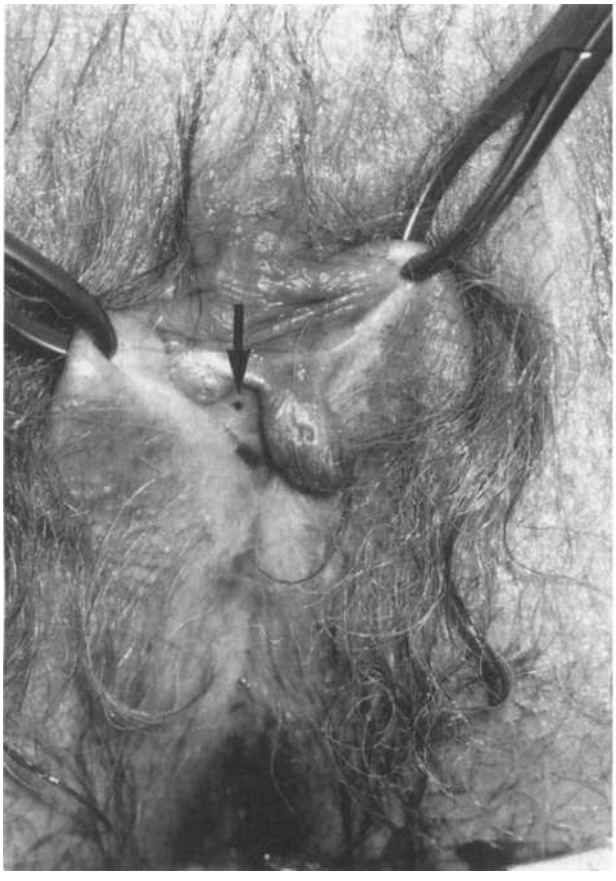

Figure 1. Arrow shows 2 mm introital opening; there is labial fusion extending from the posterior fourchette to the region of the clitoris covering the vaginal introitus and urethral meatus.

Figure 2. Vaginal introitus following surgical dissection of labial adhesion.

previously. On examination, the labia were atrophic but otherwise normal; she was prescribed dienoestrol cream. She represented in April, 1998 with acute urinary retention and had severe labial adhesion with a pin-hole opening at 6 o'clock. Under a spinal anaesthetic, the labia were separated, the vagina and urethra were identified and a vaginal pack inserted in an attempt to keep the raw area of the labia separated. She was discharged with instructions to apply dienoestrol cream 3 times a week. At her 1-month review, there was partial fusion of the anterior labia. She was advised to continue with the oestrogen cream paying particular attention anteriorly. At her 2-month review, there was some anterior and posterior fusion that was manually separated in the clinic without much discomfort. There has been no further follow-up.

DISCUSSION

Labial fusion may be congenital or acquired. Congenital labial fusion may be associated with anatomical abnormalities in the newborn including ambiguous genitalia and congenital absence of the vagina or occur as a result of true hermaphrodism, pseudohermaphrodism, congenital adrenal hyperplasia or intrauterine exposure to exogenous androgens. The congenital defect caused by the embryonic fusion of the labia majora usually follows excess androgen exposure in a 46 XX fetus (3) between the 9th and 13th weeks of gestation and superimposes variable external ambiguity on the basic female phenotype. There is clitoral hypertrophy and posterior adhesion of the labia. Berkowitz et al (2) reject the term labial fusion in these cases because labioscrotal folds are present and there is really failure of separation.

Acquired labial fusion can occur in childhood in prepubescent girls and the commonest age of presentation is 2.5 years, with more than 90% occurring under the age of 6 years (3). Trauma to the upper squamous layer of the labial epithelium is thought to cause formation of scar tissue between the 2 opposed labia as healing occurs (5). The normally low oestrogen levels in the prepubescent girl and the neutral vaginal secretions predispose them to inflammation, infection and labial adhesions. Although the exact cause of labial fusion is unknown, several disorders have been associated with this condition including vulvovaginitis secondary to 'poor hygiene', seborrhoeic dermatitis, atopic eczema and acute

infection. Recurrent trauma by masturbation or sexual abuse may also cause fusion (2). In the infant, faeces and urine in the perineal area may inflame the labia with subsequent fusion. Since the condition is associated with an oestrogen deficiency, treatment with oestrogen ointment over the fused area for 2-4 weeks is effective in 90% of cases (5). Manual separation is too painful and is not advised. Spontaneous separation of labial adhesions occurs at puberty with the production of endogenous oestrogens (1).

Labial fusion is rarely a problem in women of reproductive age as endogenous oestrogenic production at puberty changes the vaginal epithelium from being thin and atrophic to thick and glycogenated. Goldstein and Rajcher (6) reported a case of conglutination of the labia minora in a 20-year-old woman with normal ovarian function. She presented with inability to have coitus and had to apply abdominal pressure to void. She also had the impression of menstruating through the urethra. In this exception to the rule, the initial inflammatory process caused excessive scarring which endogenous oestrogen alone could not resolve.

There have been a number of case reports of labial fusion occurring in postmenopausal women (7-11) who usually present with urinary symptoms or dyspareunia. In our case there was almost complete obliteration of the introitus by vulval fusion resulting in severe voiding difficulty. **Urine was unable to escape freely through the small introital opening and there was retrograde filling of the vagina which resulted in continual leakage of urine postmicturition.** Vaginal distension can become marked and in one case (10) caused severe abdominal pain. Although minor degrees of labial fusion in postmenopausal women and in prepubertal girls often respond to local application of oestrogen cream, surgical correction under general anaesthesia as performed in this case is usually necessary. Recurrence of labial adhesions can readily occur postoperatively so local application of oestrogen cream and manual separation of the labia during the reparative period is necessary. The use of anchoring sutures to keep the labia separated during healing and rotational skin flap from the thigh to the clitoral area has been used in recurrent cases to prevent contraction and recurrent labial fusion (12).

Labial fusion is a rare but important cause of impaired bladder emptying in women. Impaired bladder emptying was present in 13% of 1,193 women referred for urodynamic investigation of urinary symptoms to our clinic (13). Urinary symptoms such as poor urinary stream, incomplete bladder emptying and straining to void are common in women with proven voiding difficulty but are not a reliable guide to diagnosis or severity of voiding dysfunction. Women with voiding difficulty were older and of higher parity. Neurological disease, pelvic surgery and psychological factors were important causes of voiding dysfunction although in 20% of women with urinary retention no cause could be found. There were no cases of voiding dysfunction secondary to labial fusion in this series.

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