Sir,
Labial agglutination in younger prepubertal girls is rather common, but it is rarely described in dermatological textbooks. Many cases are asymptomatic, but in symptomatic cases the preferred treatment is topical oestrogen therapy. The cause of labial agglutination appears to be a mild inflammatory condition in a child with a thin layer of labial epithelial cells secondary to a low oestrogen level.

CASE REPORT

A 13-month-old girl was referred to our hospital with a noticeable labial agglutination, detected recently by her parents who feared retention of urine. Examination of the vulva showed an almost complete agglutination of the labia minora fused with a thin, pale and shining membrane starting posteriorly (Fig. 1A). A 5-mm opening in the agglutination anteriorly allowed free voiding. No signs of lichen sclerosus et atrophicus were seen in the surrounding skin.

Treatment with betamethasone dipropionate (Diproderm®, Schering Plough, Ballerup, Denmark) was started and continued for 6 weeks without any effect. It appeared as though the condition progressed, with the anterior opening appearing even smaller and the surrounding skin becoming red and irritated. Diproderm® was ceased and treatment with a magistral formulation of an oestrogen-containing cream (containing 0.625 mg/g of conjugated oestrogens, as in Premarin® cream, Wyeth Pharmaceuticals, Madison, US) was applied at the agglutination once daily. After a few days the effects of treatment were seen, and after one week the labial agglutination had completely dissolved (Fig. 1B). The treatment was continued for a further week, after which the agglutination had completely dissociated. After 6 months the girl was again referred to our hospital because of a gradual recurrence of the labial agglutination. The oestrogen-containing cream was re-instituted this time with the commercial pharmaceutical EstroGel® (estradiol 0.6 mg/g in a gel containing ethanol, Leiras, Turku, Finland). After 2 weeks of treatment with EstroGel® no effect was seen at the agglutination but a quite remarkable local irritating effect occurred. EstroGel® was ceased and treatment with the magistral Premarin®-like cream was instituted. After 4 weeks of treatment only a few millimetres of agglutination remained posteriorly. The treatment was continued for a further 2 weeks.

DISCUSSION

Labial agglutination, also known as labial adhesion, is a thin membranous fusion of the labia minora of varying length. It originates at the posterior fourchette and progresses towards the clitoris. If complete, the fusion conceals the vaginal opening. If partial, as in our case, the adhesion occurs near the posterior fourchette or at times midway between the posterior fourchette and clitoris (1). Most children with minor agglutination of the labia are asymptomatic. When symptoms occur, they are often related to interference with voiding, such as dysuria or altered urinary stream, or symptoms related to the accumulation of urine behind the agglutination predisposing to vaginal or urinary tract infections (2). The agglutination in our case was almost complete, with a risk of dysuria and accumulation of urine as the parents feared. To minimize the risk of vaginal or urinary tract infections treatment was begun.

The condition is rather common but rarely described in dermatological textbooks. The estimated labial adhesion rate in girls is about 1.8%, with a peak incidence of 3.3% at 13–23 months of age (3). However, in a single study systematically studying genital findings in prepubertal girls, a prevalence as great as 38.9% has been found, including very small adhesions of 2 mm or less detected only through the colposcope (4).

The cause of labial agglutination appears to a mild inflammatory condition in a child with a thin layer of labial epithelial cells secondary to a low oestrogen level. When vulvitis or another inflammatory condition occurs,
the thinner layer of epithelia cells can denude and ap-
position of the eroded areas can result in agglutination
of the labia (3). The peak incidence at 13–23 months of
age might be a result of the combination of the children’s
low oestrogen level and irritated skin caused by nappy
use. In the study by Leung et al. (3) it was noticed that
the incidence of labial agglutination was lower in child-
ren younger than 3 months of age, as they still might be
influenced by maternal oestrogens. In our case there was
no previous history of vulvitis; therefore we do not know
why our patient developed labial agglutination, except
perhaps due to the use of nappies.

Labial agglutination, as such, is not a developmental
anomaly and therefore is not associated with abnorma-
lities of the internal genitalia or urinary system. Some
authors have suggested that in some cases labial ag-
glutination could be an early stage of lichen sclerosus
(5). In our case we were aware of this possibility from
the beginning, but found nothing which indicated that
the labial agglutination was caused by lichen sclerosus.
Doctors should be aware that in rare cases labial agglu-
tination can be a sign of sexual abuse (6).

If the labial agglutination is asymptomatic it is
recommended to wait for spontaneous resolution, which
will often happen when the oestrogen level rises at
the onset of puberty. Symptomatic or complete labial
agglutination is treated with topical oestrogen therapy
(Premarin® vaginal cream with a concentration of con-
jugated oestrogens of 0.625 mg/g) applied 1–3 times
daily in 1–8 weeks. The success rate differs from 47%
to 100% depending on treatment frequency and length
(7–9). The recurrence rate of labial fusion observed
in a retrospective study of 109 girls was 41% (8). An
alternative medical treatment is to apply a thin layer
of 0.05% betamethasone cream twice daily along the
adhesion line for 4–6 weeks (10). The success rate of
this treatment is 68%, and there is a frequency of re-
currence at 23% in a maximal follow-up period of 24
months. Topical steroid treatment was tried in our case
without success. If the child does not respond to topical
treatment, the adhesion can be separated mechanically,
e.g. manual separation under topical anaesthesia with
EMLA® (eutectic mixture of lidocaine and prilocaine). A
study of 289 prepubertal girls reported that labial sepa-
ration under topical anaesthesia was attempted in 138
patients and was successful in 112 patients (81%) (7). In
cases of very dense and fibrous agglutination, surgical
separation under general anaesthesia is an option.

The different treatments have potential side-effects.
Topical oestrogen therapy may cause vulval pigmenta-
tion, erythema, fine downy labial hair and breast tender-
ness or transient breast enlargement (9, 11). In a few
cases vaginal bleeding have been reported. Our patient
developed some redness and oedema in the treated area
of the vulva secondary to the oestrogen treatment. To
minimize the possibility of side-effects the oestrogen
cream should be applied precisely to the agglutination.
No side-effects to the betamethasone cream used for this
indication have been described. Manual separation may
be physically and emotionally traumatic to the patient
(11). Surgical separation can cause development of
fibrous tissue and thicken adhesions.

It is important to educate parents and carers in the
awareness of the benign nature of the agglutinations,
the causative mechanisms and the natural resolution.
Parents should be educated to observe for signs of
urethritis and urinary tract infections and for recurrence
of the labial agglutination. Proper technique in the ap-
lication of ointment must be demonstrated.

The authors declare no conflict of interest.

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