

Childhood vulvovaginitis and vaginal discharge in general practice

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Objective. This study aims to examine the aetiology, clinical features and response to treatment of childhood vulvovaginitis in general practice.

Method. A longitudinal survey of consecutive premenarchal patients presenting with vulvovaginitis and/or vaginal discharge in the course of normal consultations with a general practitioner was conducted in a semi-rural, group general practice with 11 000 patients in Plymouth, UK. Forty-two premenarchal girls with vaginal inflammation or discharge were surveyed, with main outcome measures being clinical evaluation, microbiological assessment of urine and vaginal swabs, and patients' and parents' assessments of resolution and relapse of symptoms.

Results. Non-specific vulvovaginitis with mixed bacterial flora, associated with poor hygiene and atrophic vaginal mucosa, was the commonest cause; specific bacteria were found in 10 out of 42 cases, including six of *Streptococcus pyogenes*. No candida was isolated. Treatment with topical oestrogen cream was effective only with mixed infection, oral antibiotics were effective in both mixed and single organisms. No evidence of sexual abuse nor foreign body was found.

Conclusion. Childhood vulvovaginitis is not uncommon in general practice, is usually associated with mixed growth of faecal organisms, and is seldom due to serious causes such as sexual abuse or foreign body.

Keywords. Vulvovaginitis, vaginal discharge, children, general practice.

Introduction

Vulvovaginitis is the commonest gynaecological disorder of prepubertal children. It causes much distress and may be associated with foreign body or sexual abuse.¹ Evidence about the clinical condition presenting in general practice is lacking, in particular in relationship to the aetiology, management and the risk of significant complications.

Between the neonatal period and puberty the vaginal mucosa is atrophic from oestrogen deficiency, analogous to the postmenopausal vagina. The skin is thin, lacks cornification and the pH is alkaline. It is very prone to infection.² The anus is close to the vulva, poor hygiene and the tendency of small children to wipe their bottoms forwards contribute to faecal contamination of the vulva. It is claimed that this is the commonest cause of childhood vulvovaginitis.^{1,2}

Other causes include foreign bodies, worms, chemical irritants and acute bacterial infections. Of specific infections, gonococcus was at one stage thought to account for 80% of all childhood vaginitis.² *Haemophilus influenza*, *Staphylococcus aureus* and streptococci (especially *Streptococcus pyogenes*) are more commonly isolated. They may be transmitted from the upper respiratory tract.^{3,4}

Candida is rare in the atrophic vagina,^{2,5,6} although many physicians believe that it is the most common cause. The role of chlamydia is unclear, but it may be a marker of sexual abuse.⁷

Treatment with topical oestrogen has been suggested for non-specific bacterial infections and some single organism infections may respond, but oral antibiotics are usually employed.^{2,8,9}

The available evidence, however, is based on patients seen in secondary care. The aim of this study was, therefore, to ascertain the aetiology, clinical features and response to treatment in a defined population of children in primary health care presenting with vulvovaginitis.

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Patients and methods

Data were collected from all premenarchal girls presenting with vulvovaginitis or vaginal discharge to one partner in a group practice between February 1988 and December 1993. Patients were excluded if they were usually wearing day nappies, or if on antibiotics at presentation, or if they left the practice list before adequate follow-up. The practice list averaged 11 000 patients shared equally between five partners. The area is semi-rural and shows an even mix of social strata, the underprivileged area score or Jarman index¹⁰ is close to the national average: mean 4.24, range -24.6 to 50.3. The number of children on the 'at risk register' of child sexual abuse is just above the national average at 1.2 cases per thousand patients.

Details of duration and presence of symptoms including pain, redness, itching, discharge and urinary symptoms were recorded. The patients were examined in the prone position with the assistance of the mother. The labia were separated and a swab was taken from the introitus or, if possible, the vagina. Charcoal swabs in Amies transport medium were used, and every effort was made to ensure that the swabs were cultured the same day. Culture plates included blood agar in carbon dioxide and anaerobically, a one-quarter malt plate for candida and a selective medium for *Neisseria gonorrhoea*. A sample of urine was collected and sent for culture and sensitivity.

Treatment was given according to clinical features—more severe cases were treated immediately; acute painful vulvitis with purulent discharge was treated with oral antibiotics immediately, those with more insidious onset were given 0.01% dienestrol cream, applied topically once daily for 14 days. Once the result of the swab was available, those with proven single bacterial infections were treated with oral antibiotics as indicated, and those with mixed bacterial growth treated with topical dienestrol. All were given advice about hygiene measures and avoidance of irritants and detergents. Results of treatment were recorded.

Patients were followed up over a period of at least 6 months. They were then contacted and the outcomes, including relapses, noted. Patients' records were reviewed and checks made for sexual abuse in the medical records, with Social Services and the health visitors.

Results

Overall 55 patients presented to one partner over a period of 70 months: 12 were excluded; of these nine left the list before adequate follow-up, two had incomplete data, and one was on antibiotics at presentation, leaving 42 in the study group. The age range was 2–9 years (Figure 1), median 4 years. Clinical features at presentation are shown in Table 1. In the first 26 samples collected

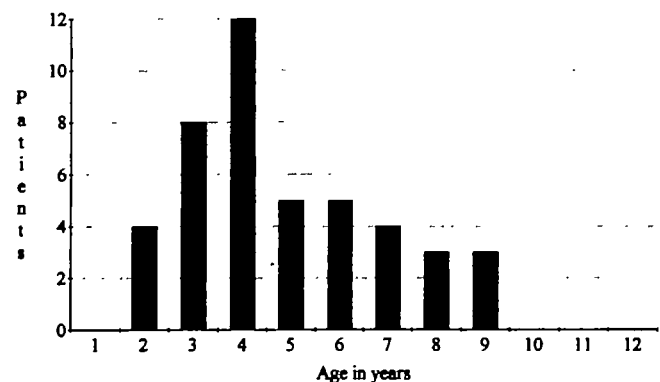


FIGURE 1 The number of cases at each year of age at presentation of vulvovaginitis in premenarchal girls

TABLE 1 Clinical features at presentation of 42 girls with vaginal inflammation and/or discharge

	n	(%)
Symptoms		
Discharge with vulval inflammation	31	(74)
Discharge only	3	(7)
Vulval inflammation only	8	(19)
Duration of symptoms		
Chronic (> 10 days)	21	(50)
Acute (< 10 days)	19	(45)
Acute on chronic	2	(5)

TABLE 2 Results of vulval swabs from 42 premenarchal girls with vaginal inflammation and/or discharge

	n	(%)
Mixed bacterial growth	29	(69)
<i>Streptococcus pyogenes</i>	7	(17)
<i>Haemophilus influenza</i>	2	(5)
<i>Staphylococcus aureus</i>	1	(2)
No growth	3	(7)

preliminary analysis showed that urine culture demonstrated no significant urinary tract infections; mixed growth was present in 7 samples, and no growth in the rest. Thereafter routine urine collection ceased. Vulval swab culture results are shown in Table 2.

Treatment outcomes (Figure 2) showed that oral antibiotics were effective in all cases employed whether as initial blind treatment or in response to swab results. By contrast, dienestrol cream had no effect on specific bacterial infections, but was successful in the remaining cases with mixed or no growth. Recurrences occurred in 11 patients: nine with mixed growth treated with dienestrol and two with *Streptococcus pyogenes* despite appropriate antibiotic therapy. Three cases with no treatment settled spontaneously; these had milder symptoms

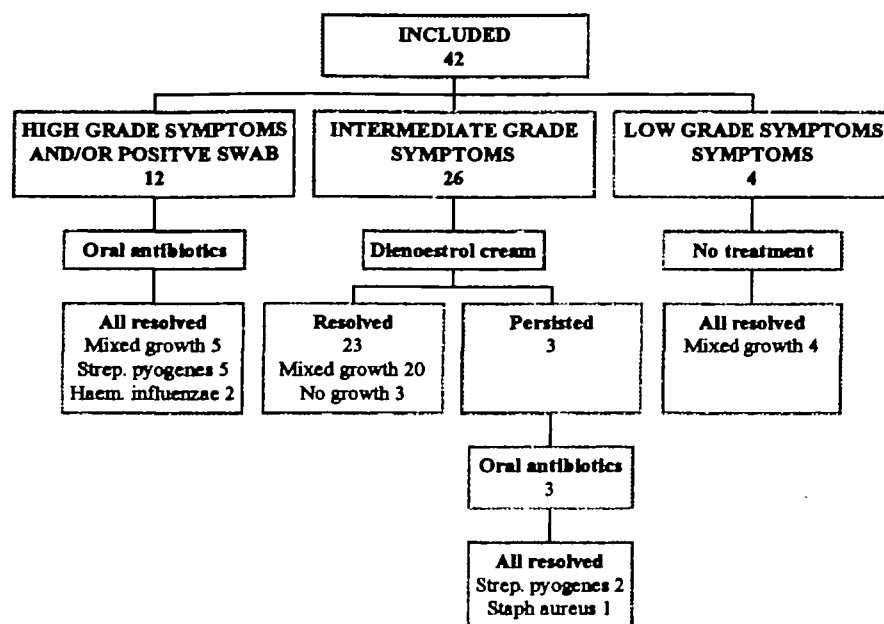


FIGURE 2 The treatment given and its outcome in 42 girls with vulvovaginitis; oral antibiotics were given to those with acute severe symptoms or if the vulval swab showed specific bacterial infection; those with chronic less severe symptoms or mixed growth on vulval swab were given dienioestrol cream if their symptoms persisted

and may have responded to advice about hygiene and avoidance of irritants. Threadworms were found in one case; however, her discharge persisted after mebendazole treatment, which abolished her local pruritis.

No evidence of foreign body was found, but one girl with a recurrent bloodstained discharge associated with *S. pyogenes* was referred to a gynaecologist: foreign body was excluded under general anaesthetic. Furthermore, no suggestion of sexual abuse was seen in any of these children. Obviously neither foreign body nor sexual abuse could be completely excluded.

Discussion

This study was designed to describe the clinical features and aetiology of vulvovaginitis presenting in general practice. In this study one partner responsible for about 2200 patients recorded 50 cases over a period of nearly 5 years; giving an approximate annual incidence of 5 per thousand. Only one patient was referred to secondary care. In the Plymouth group of hospitals, serving a population of 430 000, the diagnosis of vulvovaginitis in children is recorded for about 50 patients per year, giving an annual incidence of 1 in 10 000. For this reason it is essential to obtain evidence about it from studies in general practice if such doctors are to make informed decisions on management.

In previous reports it has been suggested that foreign body in the vagina may be an important cause.^{2,5,8,11} This was not identified in any case in this cohort of patients all of whom recovered in due course. Sexual

abuse has also been implicated,^{5,7,12} but despite careful enquiry from the health visitors and social services in this study there was no evidence of this in any patient.

In terms of bacterial infections, it has been asserted in the past that gonococcus is an important pathogen.² This was not isolated in any case, nor was *Candida albicans*. Most (69%) of the infections isolated were of mixed organisms. Where a pure growth was obtained it was of *S. pyogenes* in 17%, *Haemophilus* in 5% and in one case *Staphylococcus aureus*. Most cases responded to local oestrogens and the more acute or persistent infections to oral antibiotics. Urinary infection did not appear to contribute to the aetiology of this condition.

Conclusion

When vulvovaginitis in a child presents in general practice, it is improbable that it is associated with a foreign body in the vagina, with sexual abuse, or with gonococcal or candida infection. It is usually associated with a mixed growth of faecal organisms which will respond to topical oestrogen cream. In the more severe or acute infections it will respond to oral antibiotics of which erythromycin is probably the drug of choice. General advice on hygiene and the avoidance of irritants should be given.

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