

Perianal infection with β haemolytic streptococcus

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Abstract

A prospective study of 50 children with β haemolytic streptococcal perianal infection and related disorders identified oedematous perianal skin and cracking on parting the buttocks, forming superficial multiple fissuring, as the characteristic features of such infection, and confirmed the value of skin culture in its diagnosis.

Treatment by oral amoxicillin with clavulanic acid and a topical ointment containing bacitracin was effective in all patients.

(Arch Dis Child 1994; 70: 145-146)

Perianal infection due to β haemolytic streptococcus in childhood is a well documented but under recognised entity.

The microbiology of the perianal skin is complex and it is unclear if the β haemolytic streptococcus is part of the normal bacterial flora. Amren *et al*¹ compared perianal cultures from children with perianal infection with those of normal controls, but no study has been carried out with cultures of the perianal skin of children with the disorders which are so readily confused with β haemolytic streptococcal infection.

The aims of this prospective study were to identify the clinical characteristics of β haemolytic streptococcal infection and to assess perianal skin culture as a diagnostic tool. We compared perianal cultures from children with characteristic signs of inflammation, from children with other anal disease, and from those with anal symptoms but no obvious perianal skin abnormality.

Patients and methods

A prospective study was performed from 1989 to 1993 in a paediatric surgical practice. Patients with perianal inflammation suggesting β haemolytic streptococcal infection and other disorders presenting with perianal symptoms and signs were compared clinically and by culture of the perianal skin. These other disorders included fissures, simple irritative dermatitis, lichen sclerosis et atrophicus, and non-specific symptoms with normal perianal skin.

Patients with positive cultures were treated with oral amoxicillin with clavulanic acid, and with a topical ointment containing bacitracin.

CULTURE TECHNIQUE

Perianal skin samples were collected with a dry cotton swab rolled firmly onto the perianal skin and were transported to the laboratory dry or

Table 1 Characteristics of patients studied (n=50) with or without perianal inflammation

Patient category	No of patients
Patients with perianal inflammation	22
Patients with no perianal inflammation	28
Category	
Normal skin	6
Fissure in ano	7
Skin pallor and fissure	2
Mild redness	10
Suspected lichen sclerosis et atrophicus	3

in Stuart's transport medium. The microbiology laboratory was specifically asked to screen for the presence of haemolytic streptococcus. The swabs were seated on horse blood agar (Oxoid) supplemented with nalidixic acid and colistin sulphate. All cultures were incubated at 35°C in a humidified incubator supplemented with 10% carbon dioxide for 48 hours. Characteristic streptococcal colonies with clear haemolysis on horse blood agar were identified and serogrouped by standard criteria.²

Recovery frequencies of β haemolytic streptococcus in patients with and without perianal inflammation were compared by the χ^2 test with Yates's correction.

Results

Fifty patients were studied, 22 with perianal inflammation and 28 without signs of inflammation (table 1). Of the 22 perianal samples from patients with inflammation 14 (64%) were positive for β haemolytic streptococcus. Only four (14%) of 28 perianal samples from patients without inflammation were positive for the organism (table 2). The difference in the presence of β haemolytic streptococcus between the two clinical groups is significant ($p < 0.001$).

The presenting symptoms of patients with proved streptococcal infection were bleeding, bleeding and pain, painful defaecation, pruritus ani, and constipation. One patient whose culture grew group B β haemolytic streptococcus had perianal redness with fissuring. One

Table 2 Growth of β haemolytic streptococcus in perianal cultures

Patient category	β Haemolytic streptococcus	
	Positive growth	Negative growth
Patients with perianal inflammation (n=22)	14*	8*
Group A streptococcus	12	
Group B streptococcus	1	
Group G streptococcus	1	
Patients with no perianal inflammation (n=28)	4*	24*
Group A streptococcus	3	
Group C streptococcus	1	

* $\chi^2 = 11.04$ with 1 df, $p < 0.001$.

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patient with group G streptococcus had convincing evidence of inflammation and the child with group C streptococcus had slight perianal redness only.

Of the four patients with perianal samples positive for β haemolytic streptococcus but without clinical signs of inflammation, two had fissures in ano and two had redness but no other signs of inflammation.

No patient with completely normal perianal skin had positive cultures.

In total there were 18 (36%) patients with positive cultures, 15 (83%) with group A haemolytic streptococcus. There were 13 boys and five girls aged between 5 months and 8 years with a mean age of 41 months.

All children with proved streptococcal infection responded to treatment within two weeks and there was no recurrence during the study period.

Discussion

The presenting symptoms of perianal streptococcal infection are non-specific. The history is often long and the patients are neither ill nor febrile. Inguinal lymphadenopathy is not a feature. The term 'cellulitis' used in published papers is inaccurate, the appearance being much more that of superficial skin infection. Oedematous perianal skin and cracking on parting the buttocks, forming superficial fissuring, are characteristic.

Streptococcal infection must be distinguished from simple perianal redness or dermatitis associated with toiletries, nappy rash, worms,

encopresis, or vigorous wiping. Fissure in ano is readily recognisable but multiple fissures indicate streptococcal infection. The disorder has been mistaken for child abuse, leading to unnecessary social investigation and family distress.

Clinical recognition can be readily confirmed by culture. It is essential that the microbiologist is specifically asked to seek the β haemolytic streptococcus by special techniques.

There is a preponderance of boys. Our patients, along with others in published reports^{1-3 5} produced a series of 80, of whom 62 (78%) were boys.

Treatment with oral amoxycillin and clavulanic acid was chosen because of the possibility that other β lactam resistant organisms colonising the perianal skin might interfere with the action of penicillin on the streptococcus. Penicillin alone,^{1 2 4 5} has been found to be effective, but relapse is reported after this treatment.⁶ In our series no such relapse occurred.

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