



Perianal Infectious Dermatitis in Children

Çocuklarda Perianal Enfeksiyöz Dermatit

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Abstract

Aim: This study aimed to evaluate the clinical characteristics, microbiological findings, and treatment outcomes of pediatric patients diagnosed with perianal infectious dermatitis (PID), with the goal of enhancing clinical awareness and minimizing diagnostic delays in pediatric practice.

Material and Method: We retrospectively reviewed pediatric patients aged 0-18 years diagnosed with PID at a pediatric infectious diseases clinic. Demographic data, clinical symptoms, and culture results were analyzed. Diagnosis was based on clinical presentation and positive cultures from perianal lesions.

Results: Nine pediatric patients (mean age: 5.3 years, 8 boys, 1 girl) were diagnosed with PID. The most common symptoms were anal itching and painful defecation. Physical examination showed well-demarcated erythema in the perianal region. *Streptococcus pyogenes* was isolated in 7 patients, *Streptococcus agalactiae* in 1 patient, and both *S. pyogenes* and *Staphylococcus aureus* in 1 patient. All patients were treated with oral amoxicillin, leading to full recovery without complications.

Conclusion: This study highlights the importance of recognizing PID in pediatric patients presenting with perianal erythema, which can prevent unnecessary interventions and complications when appropriately diagnosed and treated.

Keywords: Perianal infectious dermatitis, *Streptococcus pyogenes*, children

Öz

Amaç: Bu çalışma, perianal enfeksiyöz dermatit (PED) tanısı alan çocuk hastaların klinik özelliklerini, mikrobiyolojik bulgularını ve tedavi sonuçlarını değerlendirmeyi; ayrıca bu hastalığın klinik farkındalığını artırarak yanlış tanı oranını azaltmayı amaçlamaktadır.

Gereç ve Yöntem: Bu çalışmada, çocuk enfeksiyon hastalıkları kliniğinde 0–18 yaş arası PED tanısı alan hastalar retrospektif olarak incelendi. Hastaların demografik özellikleri, klinik bulguları ve mikrobiyolojik kültür sonuçları değerlendirildi. Tanı, karakteristik klinik bulgular ve perianal lezyonlardan elde edilen pozitif kültür sonuçlarına dayanarak konuldu.

Bulgular: Çalışmaya dahil edilen toplam dokuz hastaya (ortalama yaş: 5,3 yıl; 8 erkek, 1 kız) PED tanısı konuldu. En sık gözlenen semptomlar anal kaşıntı ve ağrılı dışkılama idi. Fizik muayenede tüm hastalarda belirgin sınırlara sahip perianal eritem tespit edildi. Mikrobiyolojik incelemelerde, 7 hastadan *Streptococcus pyogenes*, 1 hastadan *Streptococcus agalactiae* ve 1 hastadan hem *S. pyogenes* hem de *Staphylococcus aureus* izole edildi. Tüm hastalara oral amoksisilin tedavisi uygulandı ve tamamında komplikasyon gelişmeksizin tam iyileşme sağlandı.

Sonuç: Bu çalışma, perianal eritem ile başvuran çocuk hastalarda PED'in doğru şekilde tanınmasının önemini vurgulamaktadır. Zamanında ve uygun şekilde tanı konulduğunda gereksiz müdahaleler ve olası komplikasyonlar önlenabilmektedir.

Anahtar Kelimeler: Perianal enfeksiyöz dermatit, *Streptococcus pyogenes*, çocuk



INTRODUCTION

Perianal infectious dermatitis (PID) is a superficial infection of the perianal skin, most commonly caused by group A beta-hemolytic streptococci (GABHS). Although the exact incidence is unknown, estimates range from 1 in 2000 to 1 in 218 cases, with a higher prevalence in boys (70%).^[1-3]

When GABHS is the identified or suspected pathogen, it is generally referred to as perianal streptococcal dermatitis. Rarely, it may be associated with streptococcal tonsillitis.^[2]

The infection can also be caused by *Staphylococcus aureus*.

^[3] Clinical manifestations typically include anal itching (78-100%), rectal pain (50%), painful defecation (50%), and bloody streaks in the stool (20-35%). Systemic symptoms such as fever and malaise are uncommon. The classic presentation is a bright red, sharply demarcated rash surrounding the anus.

^[1-4] In the acute period (<6 weeks), the rash is tender, bright, and moist. A white pseudomembrane may also be observed in this period. As the rash becomes chronic, painful anal fissures, dried mucoid exudate, or psoriasiform plaques may form.^[3]

The diagnosis of perianal infectious dermatitis is based on detecting the pathogen in culture of the lesion in a clinically suspected case. GABHS are frequently identified as the cause. The differential diagnosis includes diaper dermatitis, candidiasis, seborrheic dermatitis, psoriasis, sexual abuse, local trauma, and pinworms.^[2-4] Perianal infectious dermatitis can spread within households, especially when family members bathe together or use the same water.^[3] A 10-day course of treatment with penicillin or amoxicillin is recommended and results in rapid clinical improvement.^[1-4] Recurrence is reported in 39% of cases, which is probably related to family transmission.^[5]

Despite its typical clinical features, many clinicians are still unable to recognize PID. Delays in diagnosis and treatment lead to worsening of complaints and results in problems such as constipation and anal fissures. This case series presents the clinical features of pediatric patients diagnosed and treated for PID in our clinic, to raise awareness among clinicians.

MATERIAL AND METHOD

The study was carried out with the permission of Ankara Training and Research Hospital Ethics Committee (Date: 11.01.2024, Decision No: E25-459). All procedures were carried out in accordance with the ethical rules and the principles of the Declaration of Helsinki.

This retrospective study included pediatric patients aged 0–18 years who were diagnosed with perianal infectious dermatitis at the pediatric infectious diseases outpatient clinic. Demographic and clinical data were retrospectively collected from medical records. In our study, PID was clinically suspected based on symptoms such as anal itching, anal pain, painful defecation, rectal bleeding,

and constipation, accompanied by physical examination findings including well-demarcated perianal erythema, tenderness, and inflammation.

The diagnosis was confirmed based on clinical findings and positive culture results from samples obtained from perianal lesions.^[6] Patients with incomplete medical records, missing microbiological data, or those lost to follow-up were excluded from the study.

RESULTS

The demographic and clinical characteristics of the patients are summarized in **Table 1**. The mean age was 5.3 ± 1.47 years, with eight boys and one girl. Only one patient had an upper respiratory tract infection in the past month, and one had recurrent symptoms after previous treatment for PID. Most patients were referred from pediatrics or pediatric gastroenterology departments for persistent anorectal dermatitis. The most common symptoms were anal itching and painful defecation. Physical examinations revealed well-demarcated exudative erythema in the perianal region (**Figure 1**). Based on the treatments previously administered, five patients were initially managed for presumed bacterial skin infections, five for fungal infections, and six for diaper dermatitis. Anal lesion swab cultures identified *S. pyogenes* in seven patients, *S. agalactiae* in one, and both *S. pyogenes* and *S. aureus* in one patient. All patients received oral amoxicillin (50 mg/kg/day) for 10 days, resulting in complete resolution without complications.



Figure 1. Well-demarcated erythema in perianal infectious dermatitis

Table 1. Demographic and clinical characteristics of the patients

No.	Age (years)/ Gender	Anal itching	Painful defecation	Bloody stool	Constipation	Symptom duration	Previous treatments	Pathogen (culture)	Treatment
1	2 years 10 months/M	+	+	+	+	1.5 months	Analgesic cream	<i>S. pyogenes</i>	Amoxicillin
2	4 years 11 months/M	+	-	-	+	6 months	Antifungal cream Zinc cream Antibiotic cream Steroid cream Herbal cream	<i>S. pyogenes</i>	Amoxicillin
3	6 years 3 months /M	+	+	+	+	2 years	Anti-inflammatory cream Cicatrizing cream	<i>S. pyogenes</i> <i>S. aureus</i>	Amoxicillin
4	5 years 2 months/M	+	-	+	-	3 weeks	Anti-inflammatory cream Antifungal cream Antibiotic cream	<i>S. pyogenes</i>	Amoxicillin
5	6 years 5 months/M	+	-	-	-	1 month	Antibiotic cream Antifungal cream Moisturizing cream	<i>S. pyogenes</i>	Amoxicillin
6	5 years 9 months/F	-	+	-	+	1 week	Anti-inflammatory cream Antibiotic cream	<i>S. agalactiae</i>	Amoxicillin
7	5 years 9 months /M	+	+	+	-	2 weeks	Analgesic cream Antibiotic cream	<i>S. pyogenes</i>	Amoxicillin
8	3 years 5 months/M	+	+	-	-	1 week	Antifungal cream	<i>S. pyogenes</i>	Amoxicillin
9	7 years 6 months/M	+	-	-	-	2 months	Antifungal cream	<i>S. pyogenes</i>	Amoxicillin

DISCUSSION

In this case series, we evaluated nine pediatric patients diagnosed with PID. Most presented with typical symptoms such as anal itching and painful defecation. *Streptococcus pyogenes* was the most commonly identified pathogen, and all patients showed full recovery following oral amoxicillin therapy. These results highlight the need to consider PID in children with persistent perianal complaints.

Perianal infectious dermatitis is a superficial infection of the perianal skin characterized by distinct clinical features. However, due to frequent misdiagnosis and lack of clinical awareness, its true incidence in the pediatric population remains uncertain, resulting in lower-than-expected detection rates.^[7]

Perianal infectious dermatitis presents with symptoms such as well-demarcated exudative erythema in the anal region and associated itching, anal pain, constipation, painful defecation, and bloody stool can be observed.^[2] It usually occurs between the ages of 6 months and 10 years and is more common in males. Reasons for the higher frequency in this age group include perianal-oral digital contact, different hygiene habits, and microbial colonization of the perineum. Consistent with the literature, the mean age of the patients was 5.3 years, and only one patient was female. Anal itching and painful defecation were the most commonly reported symptoms, in accordance with previous studies.

The differential diagnosis of perianal infectious dermatitis is wide. Patients can present with symptoms that have persisted for years and may even be unnecessarily exposed to invasive procedures such as colonoscopy or retroscopy.^[2,8] Misdiagnosis

can result in inappropriate treatments, including topical antifungals, corticosteroids, or antihelminthic agents, which may obscure the characteristic clinical findings and exacerbate the condition.^[8] The diagnosis is usually delayed for weeks or months and can sometimes take over a year.^[9,10] In our case series, many topical treatments were tried before diagnosis, and the duration of symptoms ranged from 1 week to 2 years.

The causative pathogen must be isolated in culture to confirm the diagnosis. Cultures usually yield *S. pyogenes*, with *S. aureus* and streptococci other than *S. pyogenes* observed less frequently.^[11] In our case series, *S. pyogenes*, *S. agalactiae*, and both *S. pyogenes* and *S. aureus* were isolated in anal swab cultures of the 7 patients.

Most patients undergo 10 days of oral penicillin therapy for dermatitis and other symptoms. However, a recurrence rate of up to 39% has been reported. Other treatments include amoxicillin, clindamycin phosphate, erythromycin, and topical 2% mupirocin.^[8] Although penicillin is generally recommended as the primary choice of treatment for *S. pyogenes* infection, amoxicillin is better tolerated in the pediatric population due to the taste and the wide dose range. All the patients in our study received amoxicillin therapy.

The primary complication of PID is prolonged discomfort due to delayed diagnosis and treatment. Though rare, complications such as proctitis and abscess formation have been reported.^[12] Polat et al. recently reported two pediatric cases complicated by bacteremia, emphasizing the need for early diagnosis and effective antimicrobial therapy to avoid systemic spread.^[13] However, no complications were observed in any of the patients in our case series.

CONCLUSION

This study highlights that perianal infectious dermatitis is a recognizable and treatable condition in children with persistent perianal symptoms. Clinical suspicion, supported by physical examination and culture, enables timely diagnosis. Early recognition and appropriate antibiotic therapy ensure full recovery and help avoid unnecessary treatments and diagnostic procedures.

ETHICAL DECLARATIONS

Ethics Committee Approval: The study was carried out with the permission of Ankara Training and Research Hospital Ethics Committee (Date: 11.01.2024, Decision No: E25-459).

Informed Consent: Because the study was designed retrospectively, no written informed consent form was obtained from patients.

Referee Evaluation Process: Externally peer-reviewed.

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