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JCIMCR OPEN ACCESS Journal of Clinical Images and Medical Case Reports

ISSN 2766-7820

Clinical Image

Open Access, Volume 6

The ear did it: Scarlet fever unveiled

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Received: Jun 09, 2025
Accepted: Jul 09, 2025
Published: Jul 16, 2025
Archived: www.jcimcr.org

DOI: www.doi.org/10.52768/2766-7820/3687

Keywords: Streptococcus pyogenes; Acute otitis media; Scarlet fever; Streptococcal exotoxins; Auricular exudate.

Background

Streptococcus pyogenes (Group A Streptococcus, GAS) is most commonly associated with pharyngitis and scarlet fever. However, although rare, GAS may also be implicated in acute otitis media (AOM) [1] and can act as the primary site triggering systemic toxigenic complications such as scarlet fever [2].

Case report

We report the case of a 22-month-old male who presented with a three-day history of fever. He had been evaluated the previous day in the emergency department, where a diagnosis of AOM was made and oral amoxicillin prescribed. On the day of admission, the child developed a mildly pruritic, coalescent macular rash on the neck and trunk, with a rough, sandpaper-like texture consistent with a scarlatiniform eruption (Figure 1). Clinical examination revealed left-sided otorrhea (Figure 2) and right-sided AOM. The oropharynx was unremarkable, and there were no additional cutaneous lesions. Due to the characteristic rash, a rapid antigen detection test (RADT) for GAS was performed on a throat swab, which was negative (Figure 3). Given the presence of purulent otorrhea, a second RADT was performed on auricular exudate, which returned positive for GAS. Bacterial culture later confirmed the identification of *Streptococcus pyogenes* (Figure 4). Considering the child's age and maternal difficulty in administering oral antibiotics, a single dose of intramuscular penicillin was administered with good tolerance. The clinical condition resolved in the following days.

Discussion

Although GAS is an uncommon etiology for AOM, it can result in systemic manifestations, including scarlet fever. The pathogenesis is mediated by streptococcal pyrogenic exotoxins that act as superantigens, inducing widespread immune activation and the characteristic rash [3]. This case emphasizes the importance of considering non-pharyngeal sources of GAS in children presenting with scarlatiniform rashes and highlights the diagnostic utility of site-specific testing in atypical presentations.

Figure 1: Scarlatiniform rash observed on the trunk of the patient.

Figure 2: Visible otorrhea from the left ear, suggesting tympanic membrane perforation and suppurative AOM.

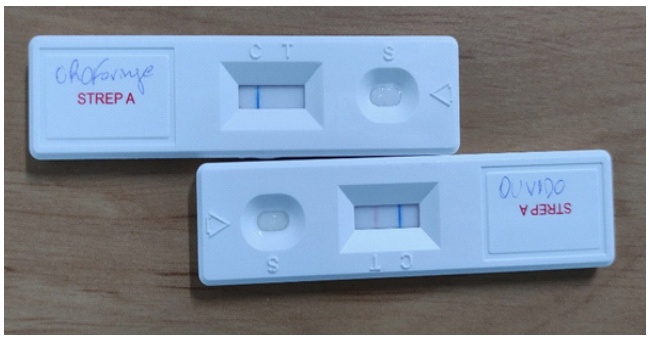

Figure 3: Rapid antigen detection test results: positive for GAS in auricular exudate; negative in oropharyngeal swab.

MICROBIOLOGIA	
BACTERIOLOGIA	
EXS.AURICULAR-EX.BACTERIOLOGICO	2025-01-02 17:28 5016002
EXAME CULTURAL	
Exame cultural(Aerobiose)	Positivo
Isolamento	*Streptococcus pyogenes*
Clindamycin	S
Erythromycin	S
Levofloxacin	I
Moxifloxacin	S
Penicillin	S
Tetracycline	S
Vancomycin	S

Figure 4: Culture confirmation of S. pyogenes from otorrhea.

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