

Turicella otitidis as an Unusual Agent Causing Palmoplantar Eczema: An Emerging Pathogen

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ABSTRACT

Introduction: *Turicella otitidis*, described as a new species over 20 years ago, has been isolated mainly from the external ear canal and middle ear fluid. Here, we report the first case of palmoplantar eczema related to *T. otitidis*.

Case presentation: Here, we report the first case of palmoplantar eczema in a 74-year-old female related to *T. otitidis*.

Conclusions: The question as to whether *T. otitidis* is a potential pathogen in cases of dyshidrotic eczema is still open, but this could be better elucidated if corynebacteria were speciated more often.

LEARNING POINTS

- The coryneform bacteria *Turicella otitidis* and *Corynebacterium auris* were recently detected for the first time in the middle ear of patients with acute otitis media and chronic otitis media.
- *T. otitidis* is a potential extraotic pathogen.
- *T. otitidis* may be implicated in the pathogenesis of palmoplantar dermatitis.

KEYWORDS

Palmoplantar dermatitis, eczema, *Turicella otitis*, *Corynebacteria*

CASE DESCRIPTION

Turicella otitidis (*T. otitidis*), a coryneform Gram-positive bacterium, was initially isolated from middle ear fluid from children with otitis media in Switzerland^[1]. It differs from most corynebacteria in lacking mycolic acids and in producing the major menaquinones MK-10 and MK-11^[2]. A study of the skin microbiome showed that corynebacteria predominated on moist skin sites but also occurred together with propionibacteria and staphylococci on sebaceous sites^[3]. Previous published cases suggest that *T. otitidis* is a potential extraotic pathogen^[4,5]. Here, we report the first case of palmoplantar eczema due to *T. otitidis*.

A 74-year-old female was seen in September 2018 with hyperkeratosis, cracking and blistering of the skin on the palms of her hands and the soles of her feet that had developed over a 3-week period with no specific cause. The clinical presentation was more in keeping with palmoplantar eczema (Fig. 1).



Figure 1. Dermatitis on the soles of the patient

The patient had no past medical history of atopy. She was initially treated with topical emollients, isoconazole nitrate and diflucortolone valerate cream once daily for 2 weeks and aciclovir cream 5 times a day for 5 days with moderate improvement. A skin swab that was taken from the blisters of her soles grew *Staphylococcus epidermidis* (*S. epidermidis*) with a positive cefoxitin screen test, that was resistant to penicillin G and oxacillin but sensitive to erythromycin, clindamycin and linezolid, and *Turicella otitidis* that was sensitive to cefoxitin, cefotaxime, piperacillin/tazobactam and linezolid but resistant to gentamicin, neomycin, vancomycin, erythromycin and clindamycin. Bacteria were identified by conventional biochemical tests and by the VITEK® 2 automated system. Cefuroxime 500 mg twice daily for 7 days was also prescribed to the patient. At her follow-up appointment, after 2 weeks, there was a great improvement in her eczema.

DISCUSSION

T. otitidis clusters within the boundaries of the genus *Corynebacterium*, along with the amycolate species *Corynebacterium amycolatum*^[2]. In addition to otitis media, it has been associated with mastoiditis, otorrhoea and posterior auricular abscess in children^[3-5]. *T. otitidis* has so far been susceptible to many antimicrobials, with surprisingly low MIC 90 values for penicillins, cephalosporins, carbapenems, chloramphenicol, ciprofloxacin, aminoglycosides, rifampicin, tetracyclines, linezolid, teicoplanin and vancomycin; the only exceptions being clindamycin and erythromycin^[3]. It seems strange that, 26 years after *T. otitidis* was outlined as a species, only a few cases of isolation have been reported in the literature. This may be due to the difficulty in diagnosing this species but it could also be ascribed to the still widely held opinion that there is no value in diphtheroids being speciated^[3]. To the best of our knowledge, this is the first reported case of palmoplantar eczema related to *T. otitidis*. In our case, the question of whether *T. otitidis* is a mere colonizer or a potential pathogen in cases of dyshidrotic eczema cannot be answered unequivocally at this time. The possibility of its pathogenic potential is still open but this could be better elucidated if corynebacteria were to be speciated more often.

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