

## Correspondence

### Black nail infection caused by *Morganella Morganii*

Dear Editor,

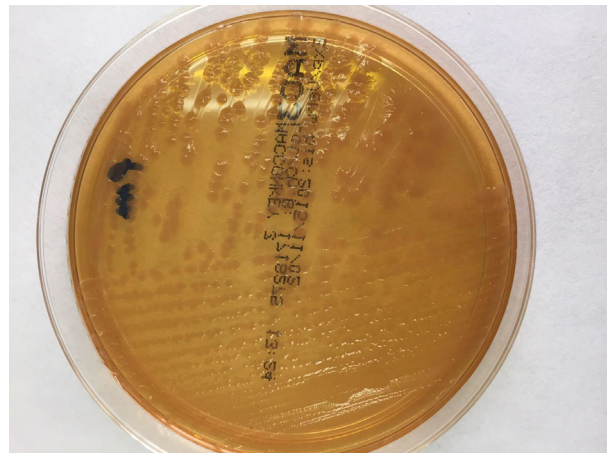
*Morganella morganii* is a gram-negative bacillus which belongs to the Enterobacteriaceae family. It is present in the environment, and it is part of the normal gastrointestinal flora of humans, mammals, and reptiles. Despite its wide distribution, it is an uncommon cause of infection in humans.<sup>1</sup> This organism exhibits a high degree of resistance to antibiotics because of inducible AmpC $\beta$ -lactamases and is therefore intrinsically resistant to ampicillin, and first and second generation cephalosporins.<sup>2</sup> *M. morganii* is responsible for a wide range of infections including urinary tract infections, bacteremia, and less commonly, skin and soft tissue infections. To our knowledge, no other cases of nail infection caused by *M. morganii* have been reported.

A 72-year-old woman with a past medical history of hypothyroidism and type 2 diabetes, treated with levothyroxine and glimepiride, came to our department due to the presence of onychodystrophy, distolateral onycholysis, and black-brown discoloration of the right ring fingernail over a period of 2 months. The patient said that the color changed gradually, and she did not recall any history of trauma, she was just bothered by its appearance. On physical examination, the nail showed blackish-brown discoloration, mild onychodystrophy of the entire nail plate, and distal onycholysis (Fig. 1). The onychoscopy exhibited irregular blackish-brown discoloration and the presence of a scaly, brittle surface, but there were no dermoscopic signs of melanocytic lesion. We decided to perform bacterial and fungal cultures. A bacterial culture of nail scrapings was positive for *M. morganii*; fungal coinfection was excluded by using a potassium hydroxide preparation and doing a culture. Since it is very rare to find a positive bacteriological culture for *M. morganii* in a healthy patient, we decided to repeat the bacterial culture exam; the positive result was confirmed for a second time (Fig. 2). The antibiogram displayed sensitivity to trimethoprim-sulfamethoxazole and to nadifloxacin, so the patient was treated with trimethoprim 160 mg-sulfamethoxazole 800 mg once a day for 2 weeks and nadifloxacin cream twice a day for 1 month. After 4 weeks of treatment, we observed a complete clinical recovery.

The black-brown pigmentation of the nail plate is called melanonychia. This condition is commonly encountered in clinical practices. Melanonychia can be observed at any age, and there are several reasons for it. The most common causes are trauma, subungual hemorrhage, onychomycosis, bacterial infection, systemic causes like Addison's disease, drug, ethnic-type nail pigmentation, nail apparatus lentigo, nail matrix nevus, and ungual melanoma. There are no cases described in the



**Figure 1** Onychodystrophy, distolateral onycholysis, and black-brown discoloration of the right ring fingernail



**Figure 2** Positive bacteriological culture for *Morganella morganii*

literature of melanonychia caused by *M. morganii*, however, a possible explanation concerns the ability of the bacillus to produce a brownish melanin-like pigment which could clinically result in melanonychia. In fact all bacteria of the *Morganella-Proteus-Providencia* group produce a brownish melanin-like pigment when they are in culture.<sup>3</sup> A differential diagnosis of this condition is difficult to perform, and management is challenging.<sup>4</sup>

*Morganella morganii* is a multi-drug-resistant opportunistic pathogen that it is often isolated as a cause of nosocomial infection in adults, especially in urinary tract or wound infections.

## 2 Correspondence

Clinical infections attributable to *M.morganii* are diversified; these diseases consist of pyelonephritis, renal abscesses, purple urine bag infection, osteomyelitis, central nervous system infection, liver abscesses, sepsis shock, and skin and soft tissue infections like cellulitis, necrotizing fasciitis, and wound infections.<sup>5</sup> Nowadays, *M. morganii* is considered to be a non-negligent opportunistic pathogen because of its virulence and increasing drug resistance. *M. morganii* develops resistance to multiple classes of antibiotics with various mechanisms. Fortunately, it is sensitive to third and fourth generations of cephalosporins, fluoroquinolones, aminoglycosides, carbapenems, and trimethoprim-sulfamethoxazole. Management of these infections has become difficult because of their extensive resistance to most antibiotics and their appearance in immunocompetent patients.

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