Yersinia ruckeri, an unusual microorganism isolated from a human wound infection

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Abstract

We report the first documented case of Yersinia ruckeri isolated from a wound infection, in a 16-year-old male after hitting a stone while paddling in a river.

Keywords: Human, MALDI-TOF MS, wound infection, Yersinia ruckeri

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Introduction

An adolescent male consulted his general physician to suture a deep wound of his left lower leg (day –1) after hitting a stone while paddling in a river in the Ardennes; a region in the southeast of Belgium. The next day, he presented at the Emergency Department for evaluation of the wound (day 0). The lesion felt warm, painful and was accompanied by cellulitis. The patient had no fever. Laboratory findings showed a slightly raised level of C-reactive protein of 14.5 mg/L (reference value <5 mg/L) and a white blood cell count of 12.9 × 10³/mm³ with an absolute neutrophilia of 8.462 × 10³/mm³ (reference value 1.4 × 10³ to 6.7 × 10³/mm³). No systemic complica-

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regimen. At follow-up consultations at day +10 no signs of infection were present, so local treatment was switched to local wound care and antibiotics were discontinued. At consultation +20 complete healing of the wound was observed.

Curiously, *Y. ruckeri* was first described as the causative agent of yersiniosis or enteric red mouth disease, which affects mainly salmonid fish [6–11]. Infections due to *Y. ruckeri* cause high mortalities in fish aquaculture systems, especially in rainbow trout (*Oncorhynchus mykiss*), leading to significant economic losses in the fish farming industry [9,11,12]. The bacterium is shed in the faeces of infected fish and the disease can be transmitted by water. *Yersinia ruckeri* is able to survive for long periods of time (more than 4 months), especially after an outbreak of the disease [10,13]. *Yersinia ruckeri* remains infective in an aquatic environment, mainly associated with poor water quality [11,12]. The strain has the ability to adhere on solid surfaces and to form biofilms [12,14]. This case report underlines the high discriminative power of MALDI-TOF MS.

The potential pathogenicity of *Y. ruckeri* in human wound infections remains unanswered and further evaluation is needed. In this case it remains unclear whether *Y. ruckeri* or another bacterium (Aeromonas spp., Lactobacillus spp. or Clostridium perfringens) caused the infection. Nevertheless, to the best of our knowledge, isolation of *Y. ruckeri* from human wounds or biopsies and its possible association with infection in humans was never previously described.

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The 16S rRNA fragment of *Y. ruckeri* was submitted to GenBank under reference number KJ192333.

Conflict of Interest

None declared.

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