

First report of *Wohlfahrtiimonas chitiniclastica* bacteraemia in South Africa

To the Editor: The first reported case of *Wohlfahrtiimonas chitiniclastica* infection in South Africa presented as a soft-tissue infection and the organism was cultured from pus.^[1] We describe, to our knowledge, the first case in South Africa of *W. chitiniclastica* bacteraemia.

The case occurred in a 17-year-old male patient who was admitted to the orthopaedic department of Tygerberg Hospital, Cape Town after sustaining a degloving injury to his right shoulder. He presented with a history of his upper arm being caught in a wood press. The patient lives in a house with running water, electricity and proper ablution facilities. He had no history of excessive alcohol abuse or smoking.

The patient was haemodynamically stable with a degloving injury of his right upper arm and shoulder (Fig. 1). Contamination of the wound with foreign material was minimal. No compartment syndrome was evident. The patient had decreased deltoid and bicep function but distally the wrist and hand were neurovascularly intact. The leucocyte count was 7.93×10^3 cells/ μ L and the creatinine level 61 μ mol/L.

An aerobic blood culture grew *W. chitiniclastica*. The isolate was identified by matrix-assisted laser desorption ionisation-time of flight mass spectrometry (MALDI-TOF MS). 16S rRNA sequencing confirmed the isolate as *W. chitiniclastica* based on 100% sequence identity to *W. chitiniclastica* strain DZ2015 (GenBank: KU301339.1)



Fig. 1. Right shoulder soft-tissue infection was the most likely source of *W. chitiniclastica* bacteraemia in this patient.

over the 724 bp sequence.^[2] Antimicrobial drug susceptibility testing was performed using the Kirby Bauer method and interpreted according to CLSI 2016 criteria for Enterobacteriaceae. The isolate was sensitive to all drugs tested, except for cotrimoxazole, which tested resistant.

The patient was discharged after a course of ceftriaxone 1 g intravenously daily and successful skin grafts to the affected area. The most likely source of the *W. chitiniclastica* bacteraemia in this patient was the wood-related soft-tissue infection, although maggots were never observed in his wound.

W. chitiniclastica is a gram-negative, facultative anaerobic gamma-proteobacterium.^[3] It was first isolated from the larvae of the *Wohlfahrtia magnifica* fly.^[4] This fly has been reported as the cause of myiasis in live vertebrates in Spain, France, Hungary, Turkey, Egypt, Iran, and Korea.^[5]

This report should help increase clinicians' awareness of this rare zoonotic pathogen and alert diagnostic microbiology laboratories that the bacteria can currently only be identified using mass spectrometry technology and molecular methods.

Acknowledgement. We gratefully acknowledge the assistance of Dr Mischka Moodley at AmPath Laboratories in identifying the isolate.

R Hoffmann

Division of Medical Microbiology, Faculty of Medicine and Health Sciences, Stellenbosch University, Tygerberg, Cape Town; and National Health Laboratory Service, Tygerberg Hospital, Cape Town, South Africa
renah@sun.ac.za

F Fortuin

Division of Orthopaedic Surgery, Faculty of Medicine and Health Sciences, Stellenbosch University, Cape Town, South Africa

M Newton-Foot, S Singh

Division of Medical Microbiology, Faculty of Medicine and Health Sciences, Stellenbosch University, Tygerberg, Cape Town; and National Health Laboratory Service, Tygerberg Hospital, Cape Town, South Africa

1. Smith M, Kularatne R, Bhagoobhai B, Perovic O. First case report of a zoonotic pathogen, *Wohlfahrtiimonas chitiniclastica* in South Africa. Poster presentation, 6th FIDSSA Congress, 5-8 November 2015, Drakensberg, KwaZulu-Natal, South Africa.
2. Bosshard PP, Zbinden R, Abels S, Böttger EC. 16S rRNA gene sequencing versus the API 20 NE system and the VITEK 2 ID-GNB card for identification of non-fermenting gram-negative bacteria in the clinical laboratory. *J Clin Microbiol* 2006;44(4):1359-1366. DOI:10.1128/jcm.44.4.1359-1366.2006
3. Nogi M, Bankowski MJ, Pien FD. *Wohlfahrtiimonas chitiniclastica* infections in 2 elderly patients, Hawaii, USA. *Emerg Infect Dis* 2016;22(3):567-568. DOI:10.3201/eid2203.151701
4. Tóth EM, Schumann P, Borsodi AK, Kéki Z, Kovács AL, Márialigeti K. *Wohlfahrtiimonas chitiniclastica* gen. nov., sp. nov., a new gammaproteobacterium isolated from *Wohlfahrtia magnifica* (Diptera: Sarcophagidae). *Int J Syst Evol Microbiol* 2008;58(4):976-981. DOI:10.1099/ijs.0.65324-0
5. Hall MJR, Adams ZJO, Wyatt NP, Testa JM, Edge W, Nikolausz M. Morphological and mitochondrial DNA characters for identification and phylogenetic analysis of the myiasis-causing flesh fly *Wohlfahrtia magnifica* and its relatives, with a description of *Wohlfahrtia monegroensis* sp.n. Wyatt & Hall. *Med Vet Entomol* 2009;23(Suppl 1):59-71. DOI:10.1111/j.1365-2915.2008.00779.x