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The Bairnsdale Ulcer (*Mycobacterium ulcerans*) in an urban Victorian practice: a case series

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The Bairnsdale Ulcer (*Mycobacterium ulcerans*) in an urban Victorian practice: a case series

The Buruli Ulcer, known in Australia as the Bairnsdale or Daintree Ulcer, is a locally necrotising disease of skin and soft tissue caused by *Mycobacterium ulcerans*. It is considered a neglected tropical disease by the World Health Organisation and is endemic to focal parts of coastal Victoria[1]. Over the last five years Victoria has seen a steady increase is the number and severity of reported *M. ulcerans* cases[2,3]. This coincides with a geographic expansion beyond the established endemic area of the Bellarine Peninsula into the Mornington Peninsula, South eastern bayside and Frankston region[2,3]. Here we present a series of three cases of *M. ulcerans* diagnosed between 2018 and 2019 in a central Melbourne dermatology practice.

Case 1: A 59-year-old female was referred from a central Melbourne hospital with a lower leg ulcer of five weeks duration not responding to oral augmentin, flucloxacillin and topical mupirocin. She had recently travelled to North America and Israel and reported bushwalking at the Mornington Peninsula five months earlier. Wound swab culture and Polymerase Chain Reaction (PCR) testing were negative and no Acid-Fast Bacilli (AFB) were identified. Two punch biopsies also failed to identify a pathogen. Given the history of bushwalking in an endemic area, the lack of response to other antibiotics and the suggestive clinical presentation, we suspected *M. ulcerans* despite negative culture results. She was successfully treated with rifampicin and clarithromycin.

Case 2 (figure 1): An 18 year old female was also referred from a nearby hospital with an ulcer of 6 weeks duration which was persistently erythematous and oedematous despite intravenous and oral antibiotics (ceftriaxone, clindamycin and ciprofloxacin). On examination in our clinic there was mild cellulitis surrounding a one centimetre punched out, sloughing ulcer on the left lateral ankle. Biopsy samples were negative for culture but a PCR and histology confirmed the presence of *M. ulcerans.* She had no history of travel to or contact with an *M. ulcerans* endemic region. She was referred to local infectious diseases services for management.

Case 3: A 70-year-old male with a past history of pyoderma gangrenosom (PG) presented with a new, painful purple papule on his right calf. The lesion was initially treated as PG with prednisone, however, there was rapidly progressive localised oedema, erythema, with only minimal pain. Biopsies were sent for culture and he was commenced on roxithromycin. Histology showed an atypical lymphocytic lobular panniculitis. Culture and PCR confirmed the diagnosis of *M. ulcerans* despite no history of exposure. He was switched to clarithromycin and rifampicin and the wound was surgically debrided. The lesion healed over eight weeks.

Consistent with previous reports on *M. ulcerans*[4], these three patients presented with symptoms of several weeks duration prior to diagnosis and all had single lesions occurring on the lower limbs. Case 1 had an incubation period of 5 months which correlates with the previously reported mean *M. ulcerans* incubation period of 4 to 5 months[5]. These cases demonstrate the recent geographical expansion of *M. ulcerans* in Victoria as Case 2 and 3 had no identifiable contact with a previously known endemic area. The reason for the expansion and increased disease severity is unclear, possible reasons discussed to date include climate change, evolution of more pathogenic strains and/or population expansion[2]. We speculate that case 2 and 3, who both presented with symptoms in winter, had been exposed to infection during the summer. Increased outdoor activity during warmer weather and subsequent direct exposure to soil (e.g. through gardening) and/or insect vectors (when less clothing is worn) are possible sources of transmission in these cases. Furthermore, a potential zoonotic cycle with possums a has been postulated to be involved in the expansion of *M. ulcerans* infections[2,6]. These mammals are commonly seen in urban Melbourne parks

and suburbs thus could act as a reservoir for the infection which can be transmitted to humans, most likely indirectly through faeces[6].

The infection is a public health issue and interventions are necessary to prevent transmission, however, this is challenging as the environmental reservoir and mode of transmission remains unknown. Victorian medical practices need to be vigilant when seeing patients with an atypical ulcer or nodule as prompt recognition and treatment will reduce disease severity and complications.

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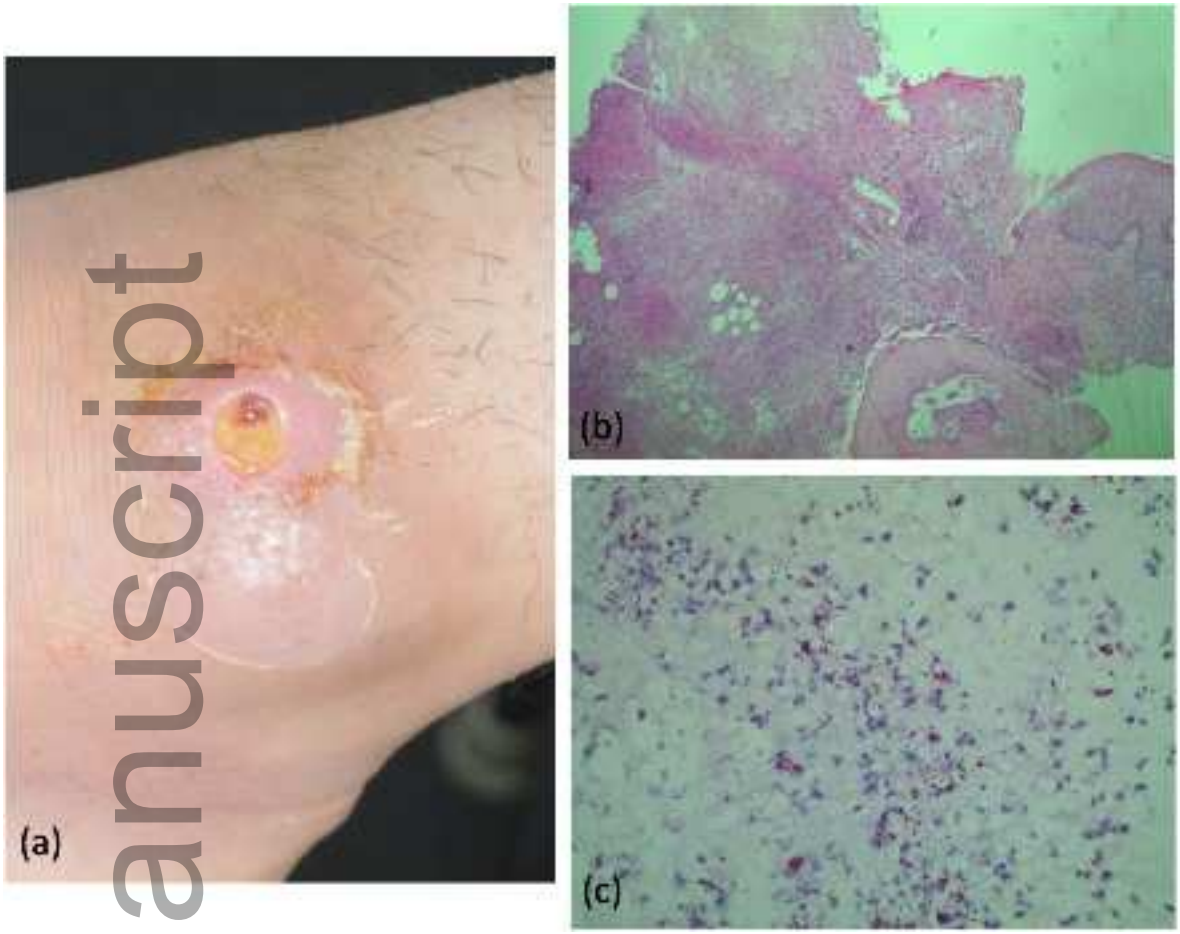

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