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MEDIA RELEASE

FLESH-EATING BURULI ULCER: BEWARE THE NEGATIVE TEST RESULT

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CORRECT swabbing technique and caution when interpreting negative results are needed when testing for the presence of *Mycobacterium ulcerans*, the bacteria which causes the flesh-eating disease Buruli ulcer, according to the authors of a research letter published in the *Medical Journal of Australia*.

Buruli ulcer is endemic in the coastal regions of Victoria and northern Queensland, and the incidence is increasing annually.

According to the authors, led by Associate Professor Daniel O'Brien, an infectious diseases specialist at University Hospital Geelong, early diagnosis of Buruli ulcer is "vital for good outcomes", but problems with false negatives can cause diagnostic delay or misdiagnosis.

"The most important diagnostic method for Buruli ulcer in terms of accuracy, speed, and ease of performance is the polymerase chain reaction (PCR) assay of lesion tissue for the DNA insertion element IS2404," O'Brien and colleagues wrote. "In Australia, the sensitivity and specificity of the assay are each reported to be 100%. However, some often unrecognised pitfalls can lead to missed diagnoses and serious adverse outcomes."

The authors analysed data from 551 patients at Barwon Health in Victoria, with "prospectively confirmed *M. ulcerans* disease" diagnosed between 25 March 1998 and 13 February 2018.

"The PCR result for the initial swab specimen was negative in 34 cases (6.2%), but PCR results for repeat samples were positive (biopsy samples, 15; swab specimens, 19). The initial negative test led to a diagnostic delay of as long as 74 days," they found.

"Health practitioners should be cautious when interpreting negative PCR results from people with lesions suggestive of *M. ulcerans* disease, especially when testing early lesions or children. If suspicious, repeat the PCR test, ideally on a punch biopsy specimen.

"Non-ulcerative lesions require a biopsy to obtain fresh tissue for the PCR test."

"Incorrect swabbing technique probably explains most negative initial PCR results, with insufficient clinical material collected for detecting bacteria. It is imperative that swab samples are taken by circling the entire undermined edge of a lesion, and checking that clinical material from the lesion is visible on the swab surface," O'Brien and colleagues concluded.

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