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CASE REPORT

Cutaneous chancroid in a visitor from Vanuatu

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SUMMARY

A 23-year-old woman from Vanuatu presented to an Australian hospital with a 3-week history of a non-healing ulcer on the lower leg. A swab was submitted for a multiplex polymerase chain reaction designed to investigate genital ulcerative conditions. *Haemophilus ducreyi* was detected and the gene product was subsequently sequenced, confirming the diagnosis of cutaneous chancroid. The lesion responded to intramuscular benzathine penicillin. This report adds further evidence that cutaneous chancroid should be considered in the evaluation of skin ulcers in the south Pacific.

Key words: benzathine penicillin, *Haemophilus ducreyi*, polymerase chain reaction.

INTRODUCTION

Chancroid is a sexually transmitted ulcerative genital disease caused by *Haemophilus ducreyi*. There may be associated inguinal lymphadenopathy and bubo formation.[1] It is rarely reported in Australia and seen only in travellers returning from endemic regions, particularly Africa, Asia and Latin America.[2,3] Extragenital chancroid usually follows autoinoculation and risk may be increased in association with HIV infection.[3] Recently three cases of cutaneous chancroid were reported from children who had visited Samoa.[4] We report a case of cutaneous chancroid in a visitor from Vanuatu.

CASE REPORT

A 23-year-old female crew member from a visiting tourist ship presented with a 3-week history of a non-healing ulcer on the lateral side of her lower right leg. The patient was otherwise well and had no relevant past medical history. The lesion had begun as an indurated pruritic area while in Port Vila, Vanuatu, where she lived with her family. She could not recall a preceding injury. The lesion broke down to form a non-painful ulcer. The patient remained well with no systemic symptoms or fevers and continued to work. She denied recent sexual exposure. Over time the ulcer had grown in size and she presented to the ship's doctor who referred her for assessment. There was no palpable inguinal lymphadenopathy. A genital examination was not performed but she did deny having any lesions elsewhere on her body. The rest of the examination was unremarkable and the patient was afebrile. The lesion was 30×20 mm in size and the ulcer base had a clean granular appearance that was level with the surrounding skin (Fig. 1). There was no localized tenderness or induration on palpation. The surrounding skin was slightly darker.

A provisional diagnosis of yaws was made and serum was collected for syphilis serology, a surface smear was collected for cytology and silver stain, and a dry swab was collected for a GUMP that was designed to detect the possible causes of genital ulcerative disease: Herpes simplex virus types 1 and 2, *Treponema pallidum*, *Haemophilus ducreyi*, and *Calymmatobacterium (Klebsiella) granulomatis*.[5] The latter test was ordered in an attempt to detect *Treponema pertenue*, the causative agent of yaws. The patient was treated with 900 mg of intramuscular benzathine penicillin and contact details were obtained as she was due to leave the region that night.

The RPR and TPPA tests were both non-reactive. Cytological examination revealed neutrophils, occasional macrophages and squamous cells. No organisms, including spirochaetal organisms, were seen. The GUMP test repeatedly detected *H. ducreyi*. The PCR products were sequenced

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Abbreviations:

GUMP	genital ulcer multiplex PCR
NCBI	National Centre for Biotechnology Information
PCR	polymerase chain reaction
RPR	rapid plasma reagin
TPPA	*Treponema pallidum* particle agglutination

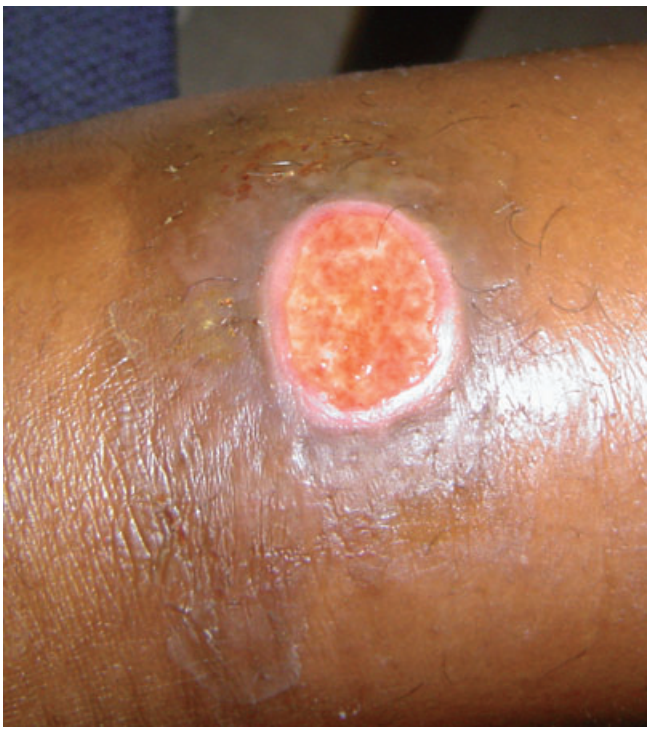

Figure 1 Cutaneous chancroid lesion on the lateral side of right leg.

with the forward and reverse primers used in the PCR that are targeted to the 16S rRNA. Using a blast search, 327 base pairs of trimmed sequence were run against the NCBI database. Nucleotide identity was 100% with the *H. ducreyi* 16S ribosomal RNA gene.

The ship's doctor was contacted and advised to give the patient azithromycin 1 g orally; however, he reported that the lesion had healed.

DISCUSSION

We are aware of only one other report of cases of extragenital cutaneous chancroid that have occurred in the absence of genital lesions.[4] This report had not yet been published at the time that we saw our patient. We acknowledge that the diagnosis in our case was made fortuitously through use of the GUMP test, which was ordered to diagnose yaws. One of us had seen two paediatric patients in the recent past with undiagnosed ulcers on the leg. Although a diagnosis of yaws had been considered in both cases, syphilis serology was negative. Syphilis serology is reported to be positive in approximately 90% of children with yaws[6] and when dark ground microscopy is unavailable, serology is the only non-invasive way of supporting a clinical suspicion of the diagnosis. One of these children was from a region of the Solomon Islands where skin ulcers are common and presumed by local people to be caused by *T. pertenue* (yaws). The lack of a confirmatory test in these two previous cases prompted the use of the GUMP test in the current case. The GUMP test uses primers that amplify a 260 base pair region of the lipoprotein gene of *T. pallidum* subsp. *pallidum*.[7] This gene is also present in *T. pallidum* subsp. *pertenue*, but there is no data that indicates whether the GUMP test would detect DNA from this organism.

The detection of *H. ducreyi* in the GUMP test was unexpected and this was the first occasion that the laboratory conducting the test had recorded a positive result. The use of PCR for *H. ducreyi* is reported to be both sensitive and specific.[1] The gene product in our case was sequenced and confirmed the identity of the amplified region. Standard bacteriological methods would have been unlikely to isolate the organism, which is fastidious and requires special culture media to grow. An attempt to isolate the responsible organism, if suspected, provides an opportunity to test for penicillin sensitivity. The GUMP test is a promising alternative to diagnosis.

Cutaneous chancroid is likely to be caused by inoculation of the organism through minor skin abrasions; indeed, cutaneous lesions that develop in less than 24 hours have been induced in volunteers at a high rate by inoculation of as little as one colony-forming unit.[8]

The recommended treatment for chancroid is either parenteral ceftriaxone or oral azithromycin; however, response to penicillin has been recorded and in the recently described cases of cutaneous chancroid the minimum inhibitory concentration for all three isolates was low.[4]

Cutaneous chancroid in our patient from Vanuatu and the three recently reported cases from Samoa indicate that this is a more common problem in the south Pacific than previously recognized.

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