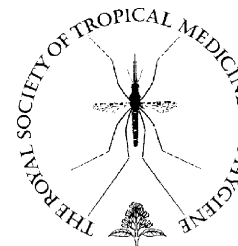




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# Isolation of *Trichophyton concentricum* from chronic cutaneous lesions in patients from the Solomon Islands

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## KEYWORDS

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**Summary** *Tinea imbricata*, also known as 'Tokelau', is an uncommon superficial mycosis caused by the anthropophilic dermatophyte *Trichophyton concentricum*. Cutaneous lesions appear characteristically as scaly and concentric rings that may cover all parts of the body. Often acquired in childhood, tinea imbricata is a chronic disease and lichenification is extremely common due to pruritus. The dermatophytosis mainly occurs in the South Pacific, but also in some regions of Southeast Asia and Central or South America. *Tinea imbricata* usually affects people living in primitive and isolated conditions. Mycological analysis is required for the diagnosis. The epidemiological and mycological study reported here took place in the Solomon Islands from June–September 2006. Skin scrapings were collected from 29 Melanesian patients (aged 8 months to 58 years) with chronic cutaneous lesions and were analysed mycologically in the Laboratory of Parasitology and Mycology of Angers University Hospital (France). Ten patients showed very evocative lesions with a positive direct examination, but *T. concentricum* was only isolated from three patients. Identification of the strains was confirmed by sequencing of the internal transcribed spacer (ITS) regions. With the increase in international travel, one cannot disregard that this very rare species may be isolated by mycologists in temperate areas from patients coming from endemic foci.

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## 1. Introduction

*Tinea imbricata* is an uncommon, superficial mycosis caused by the anthropophilic dermatophyte *Trichophyton concentricum*. The geographic distribution of this fungus is limited to some islands of Oceania (Melanesia and Polynesia) and, to a lesser extent, to several regions of Southeast Asia (India, Vietnam) and Central or South America (Mexico, Brazil). The condition, which is called 'Tokelau' in Oceania and India and 'Chimberé' in Brazil, principally affects the populations of isolated villages. Typical cutaneous lesions present as scaly and polycyclic rings that can extend to form polycyclic plaques, with a lamellar detachment of the scales (Hay, 1988). Younger lesions, which form brown maculae or papules, are often very pruritic. *Tinea imbricata* may affect the whole body, including the face and scalp, with a predilection for the trunk and the surface of extensor muscles. Nails, palms and plantar surfaces are seldom affected and hair is never parasitised. In this particular form of *tinea corporis*, almost one-half of the corporal surface may be covered with squamous scales. Often acquired in childhood, Tokelau evolves chronically and lichenification is common due to intense pruritus.

The Solomon Islands are said to be a classical focus of *tinea imbricata*, although no data on its distribution nationwide are available. In 1985, Eason and Tasman-Jones noted its presence restricted to small endemic foci in the Western province (Eason and Tasman-Jones, 1985). In April and May 2005, a general practitioner from Noumea (New Caledonia) confirmed the occurrence of this dermatophytosis among native people from Vanikoro while he was a member of the medical team during an expedition of underwater archaeological exploration. In 2006, as he decided to go back to Solomon for a 3-month cruise, an

epidemiological and mycological protocol was initiated in collaboration with the Pasteur Institute in New Caledonia aimed at a better description of this unusual mycosis with regard to its clinical, epidemiological and mycological aspects.

## 2. Materials and methods

### 2.1. Study area and patients

This epidemiological and mycological study took place in June–September 2006 in the Solomon Islands, which consist of nearly 1000 islands in the South Pacific, at the east of Papua New Guinea. The islands' ocean-equatorial climate is extremely humid throughout the year, with a mean temperature of 27 °C (80 °F) and an annual rainfall of approximately 3050 mm. The 2006 population was estimated to be 552 438 inhabitants, mainly Melanesian, and the annual gross domestic product per capita is among the lowest in the world (US\$1894).

Fourteen villages from various islands, including Russell, New Georgia and Santa Cruz archipelagos, Santa Isabel and Malaita islands, were visited during the study. During general medicine consultations, patients from these villages benefited from a clinical examination and all patients presenting with chronic cutaneous lesions were included in the study. They were questioned regarding their age, profession, way of life, the evolution of their lesions and for information about people living in the same household. The patients, or their parents, were informed of the aim of the study and their consent was requested for skin sample and picture collection.



**Figure 1** Polycyclic and scaly cutaneous lesions on (A) the face and (B) the body of a 12-year-old boy. First lesions of *tinea imbricata* appeared approximately 6 years ago (Vanikolo Island, Solomon Islands).

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