

## HUMAN INFECTION BY *MICROSPORUM NANUM* IN BRAZIL

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### SUMMARY

The first autochthonous Brazilian case of human ringworm infection by *M. nanum* is reported. The origin of the infection could not be traced.

### INTRODUCTION

FUENTES <sup>15</sup>, in 1956, based on the isolates from two human ringworm infections, described a new species of dermatophyte and named it *Microsporum nanum*. DAWSON & GENTLES <sup>17</sup>, in 1961, reported the ascigerous form of *M. nanum*, named *Nannizzia obtusa*.

Human infection by *M. nanum* has been recorded sporadically. This dermatophyte commonly causes outbreaks among pigs in United States <sup>11, 13, 16, 20, 21, 22</sup> and Australia <sup>14</sup>; porcine infection occurred also in Kenya <sup>17</sup> and Cuba <sup>1</sup>. However, *M. nanum* is primarily a geographic fungus <sup>1</sup>. It has been isolated from soil in United States, <sup>1, 2</sup> Kenya <sup>3</sup>, France <sup>15, 25</sup>, Sweden <sup>23</sup> and Bulgaria <sup>5</sup>.

This report describes the clinic and epidemiologic study of the first case of human infection by *M. nanum* in Brazil.

### CASE REPORT

A 16 year-old-white boy complained of lesions on his right leg and both knees. The lesion on the leg had been present for 6 months and those on the knees for 3 years. The lesion on the leg was annular with advancing scaly erythematous border and clear center; those one located on the knees, were hyperkeratotic erythematous scaling plate-like with borders consisting of crusting and vesiculation (Fig. 1a).

Laboratory findings. Scrapings were taken from the active border of the patient's lesions. The scrapings were prepared for microscopic examination by fixing, staining and mounting on clear microscopic slides <sup>24</sup>. Scales and vesicles contents were cultured on Mycosel agar (BBL). Typical hyphae of dermatophyte were disclosed at the slide mounts. *M. nanum* could be identified in subsequent cultures. They were rapidly growing, at first white-colored with a velvety surface and as the colonies aged, they became granular with a cream-colored aerial mycelia and a tannish-orange undersurface (Fig. 1b). Microscopically numerous echinulate, elliptical, two-called macroconidia (9-17 x 6-8) were found (Fig. 1d, 1e). Few clavate to cylindrical microconidia (5 x 12) were also seen (Fig. 1c).

### EPIDEMIOLOGICAL INVESTIGATION

The patient lived in a farm near Santa Maria, Rio Grande do Sul, with his parents and 9 siblings. Usually the farm had one boar, 3 sows and 6 to 12 piglets. There were also 4 dogs and 4 cats. Sometimes the patient handled pigs.

All the members of the patient's family were examined. Only his 20 year-old-sister presented a ringworm lesion. Collected material from her were processed for mycological purpose. A *Trichophyton* sp. could be isolated from the girl's lesion.

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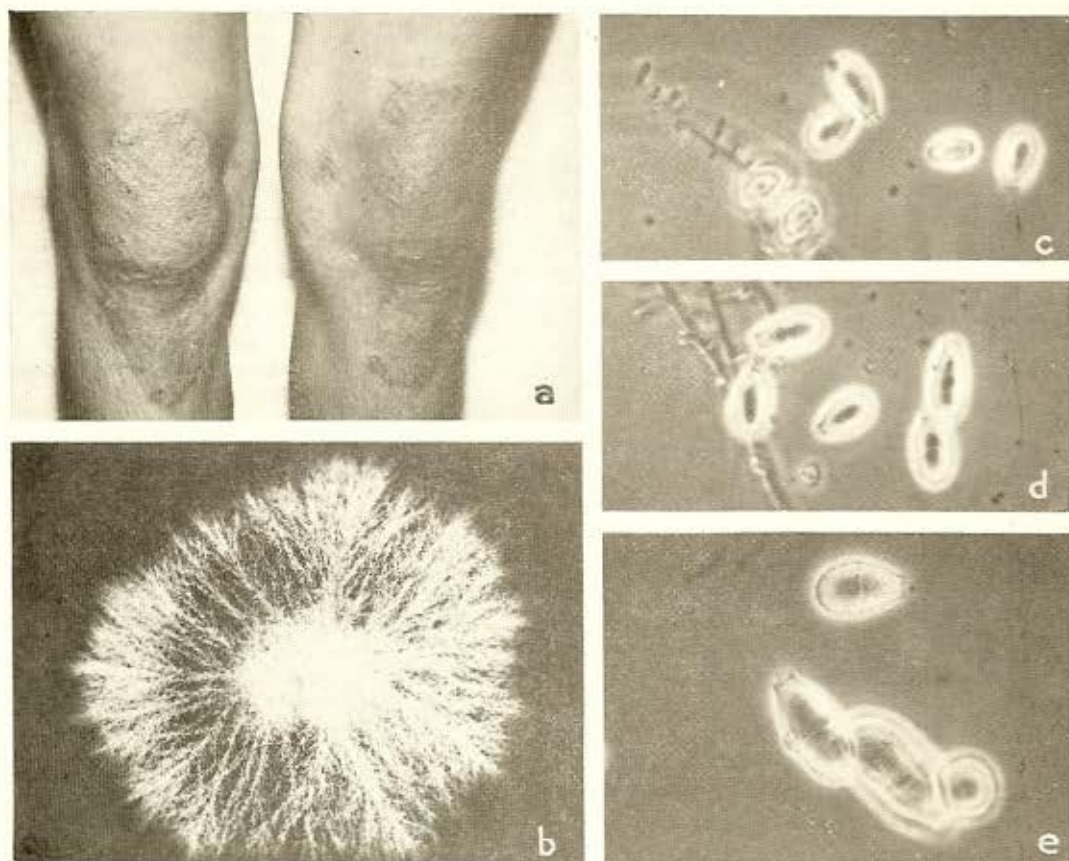


Fig. 1 — a) *M. nanum* lesions three year duration;  
b) Twenty day old *M. nanum* culture (at 25°C) grown on Sabouraud dextrose agar, after 2 subcultures;  
c) and d) Microconidia and macroconidia of *M. nanum* growing on Sabouraud dextrose agar, 125 X;  
e) Echinulations on surface macroconidia, 200 X.

Eleven pigs, four dogs and four cats were screened for suspected ringworm lesion. Only two half-year-old piglets had crusty lesions. Scrapings taken from both the piglets presented no hyphae in microscopic examination and no dermatophyte could be isolated in culture.

Twenty soils samples were collected from one-acre pig lot. They were assayed using human hair bait<sup>27</sup>. *Microsporium nanum* could not be isolated from them. *Microsporium gypseum* was isolated from all soil samples. *Trichophyton ajelloi*, *Microsporium cookei* and other keratinophilic fungi were also isolated.

#### DISCUSSION

*Microsporium nanum* is a geophilic dermatophyte, primarily a parasite of pigs<sup>1</sup>. It has a low degree of infectivity for humans. *M. nanum* is recorded as the agent of sporadic cases of human ringworm in Canada<sup>12</sup>, United States<sup>1, 9, 10, 26</sup>, Mexico<sup>8</sup>, Cuba<sup>18,19</sup>, Rumania<sup>1</sup>, Australia<sup>1</sup> and New Zealand<sup>1</sup>. In our present case was surprising the long duration of the lesions because it seems that human infection by *M. nanum* is relatively short-lived<sup>6</sup>.

Human infection by *M. nanum* seems to be usually acquired from pigs<sup>6, 26</sup>. Our patient's infection having been acquired three

years ago did not permit to trace its source of infection. No screened animals presented a ringworm infection. Our negative results to isolate *M. nanum* from pig lot soil, occurred also to MULLINS et al.<sup>26</sup>. The overgrowth of other rapidly growing keratinophilic fungi on the baited soil prevent *M. nanum* colonies to grow. On the other hand, *M. nanum* isolation from soil seems not to be easy, because in all but one<sup>15</sup> surveyed soil by other, few isolates of this dermatophyte has been obtained.

#### RESUMO

#### *Infecção humana por Microsporium nanum no Brasil*

É relatado o primeiro caso humano autóctone de infecção pelo *M. nanum*, ocorrido no Brasil. A fonte de infecção não pôde ser evidenciada.

#### ACKNOWLEDGEMENTS

We are grateful to Mr. J. E. G. Pollak for the English correction and to Mr. Bondarenko for the photographs of the patient's lesions and the *M. nanum* colony.

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Recebido para publicação em 8/3/1972.