

A TEN-YEAR SURVEY OF THE CUTANEOUS MYCOSES IN THE STATE OF RIO GRANDE DO SUL (BRASIL).

II — Candidiasis of skin and nail

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SUMMARY

A survey of cutaneous candidiasis in the hinterland of the southernmost state of Brasil was made during 1960-1969.

The clinical types and the distribution of the lesions according to their localization on the body were discussed.

INTRODUCTION

Since 1960 candidal infection of skin and nail has been studied by us ⁵ and partial results were published ^{3, 4}. These investigations dealt with the same groups of patients as in part I of our survey ⁶.

The prevalence of cutaneous candidal lesions and a discussion of some mycologic aspects of candidal infection of skin and nail of the people of Santa Maria, Rio Grande do Sul, Brasil, are presented in this second part of our survey.

MATERIAL AND METHODS

During the study period (1960-1969) 142 patients with cutaneous candidiasis were referred to us for mycologic diagnosis by the dermatologic service of the School of Medicine, and by private physicians.

Scrapings of skin and nail were fixed and stained with the Giemsa stain ⁵. Cultures were made on Sabouraud's glucose agar with chloramphenicol and cycloheximide ^{*}. Isolates

were transferred to "Chlamyospore agar" ¹⁰ or they were submitted to the germ-tube-test ^{8, 11}. If no chlamyospore neither germ-tube were produced, the isolates were studied by Benham's method ¹.

RESULTS

Typical *Candida* hyphae were detected by direct microscopic examination of skin and nail scrapings in all 142 patients, sometimes after a careful search in a great number of scales. In 129 of the specimens only hyphae of *Candida* were found. In 13 patients hyphae of *Candida* and elements of a dermatophyte and/or *Corynebacterium minutissimum* were detected associated in the same lesion. Cultures were obtained from all but 10 patients. 128 strains of *Candida albicans*, 2 strains of *C. tropicalis* and 2 strains of *C. parapsilosis* were identified.

The distribution of candidal lesions on the body regions of male and female patients is presented in Table I.

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* Cycloheximide was used since 1963

TABLE I
Distribution of cutaneous candidal lesions by body regions and sex of the patients

Site of infection	no. of patients			%
	male	female	total	
Hand:				
finger nail	1	48	49	34.6
interdigital spaces	1	30	31	21.9
finger nail and interdigital spaces	—	2	2	1.4
Foot:				
toe nail	—	1	1	0.7
toe webs	14	10	24	16.9
toe nail and toe webs	—	14	14	9.8
Large folds:				
axillae	2	—	2	1.4
groin	14	1	15	10.5
axillae and groin	1	1	2	1.4
axillae, groin and underbreast folds	—	2	2	1.4
Total	33	109	142	100.0

DISCUSSION

During the period 1960-1969 only patients with localized cutaneous candidiasis were referred for mycologic diagnosis. They presented: 1) intertriginous candidiasis; 2) candidal onychomycosis; or 3) both of these manifestations. All patients were adults (aged 18 to 60); 76.7% were females and 23.2% were male.

The most frequent site parasitized by *Candida* was the nail. It was also isolated from lesions of the toe-webs, interdigital space of the hand, groin, axillae and underbreast folds, in that order of frequency. Only one patient presented widespread lesions out of the toe-webs to the dorsum of the foot and the inferior third of the leg.

Clinical aspects of the lesions were similar to those described in the text book of Medical Mycology. Candidal lesions of the foot were localized in many interdigital spaces or many

toe nails. Candidal lesions of the hand were usually restricted to some nail of the right hand or to the interdigital space between the middle and fore finger of the right hand. Lesions of the large folds of the body were usually bilateral.

Candidal infection of the toe-webs and the toe nail were associated with maceration due to excessive sweating. There was one exception: a diabetic woman that presented widespread lesions over the glabrous skin of the foot and leg. Intertrigo of the interdigital spaces of the hand and onychomycosis of the finger nails were found housewives subjected to skin maceration by frequent and prolonged immersion in water. Candidiasis of the large folds were associated with obesity in three females and in one male, and with diabetes in one man that presented also "muguet". Dermatophytosis and/or erythrasma may be considered as a predisposing factor for candidal infection of the toe-webs or the groin.

Candida instead of a dermatophyte was obtained in cultures from 30% of 134 microscopically proved cases of dermatophytosis of the groin and toe-webs⁶. On the other hand *Candida* was isolated from lesions of non-mycotic dermatitis of the groin⁷ or from toe webs of normal people⁹. Consequently, isolation of *Candida* in culture does not proving its pathogenicity can induce to a misdiagnosis. As demonstration of tissue phase of a fungus is a fundamental proof of its pathogenicity, detection of the parasitic elements of the agents of cutaneous mycosis in the direct microscopic examination may be the first step of the mycologic diagnosis^{2, 5, 12}. At least, direct method is the only way to detect multiple agents in the same cutaneous lesion.

RESUMO

Um inquérito de dez anos sobre micoses cutâneas no Estado do Rio Grande do Sul (Brasil).

II — Candidíase da pele e unha

Cento e quarenta e dois pacientes com candidíase cutânea foram estudados no interior do Estado do Rio Grande do Sul, Brasil, no período de 1960-1969.

São discutidos os tipos clínicos e a distribuição das lesões de acordo com a sua localização no corpo.

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