

Case Report—

Favus in a Fighting Cock
Caused by *Microsporum gallinae*

Edwin Fonseca and Leonel Mendoza

Escuela de Medicina Veterinaria
Universidad Nacional, P.O. Box 86
Heredia, Costa Rica

Received 8 July 1983

SUMMARY

The first diagnosis of favus in chickens in Costa Rica was made in a 1-year-old fighting cock that had lesions surrounding the comb. The etiologic agent was isolated and identified as *Microsporum gallinae*. The rooster recovered during topical treatment with tolnaftate and oral treatment with griseofulvin.

RESUMEN

Se reporta por primera vez en Costa Rica la presencia de tiña en pollos. El diagnóstico se hizo en un gallo de pelea de un año de edad que presentó lesiones alrededor de la cresta. El agente etiológico fué aislado y clasificado como *Microsporum gallinae*. El gallo afectado se recuperó con el uso de tolnaftate y griseofulvina como tratamientos local y oral respectivamente.

INTRODUCTION

The first report of the agent of poultry ringworm was made in 1881 by M. Megnin, who named the etiologic agent *Epidermophyton gallinae* (3). Further studies were made by Raymun Sabouraud in 1910, who changed the name of this dermatophyte to *Achorion gallinae* (3,6).

In 1952, Margarita Silva and Rhoda Benham changed the genus to *Trichophyton gallinae* (6). In 1968, Gordon and Little (4) isolated the dermatophyte from a monkey. They found macroconidia with rough outer walls, indicating that the dermatophyte should be included in the genus *Microsporum* (4); this change had been suggested by Grigorakis in 1929 (2).

The literature indicates that lesions of favus are frequently located on the comb and wattles of the affected fowl in the form of yellow-white scabs, which can be secondarily contaminated with

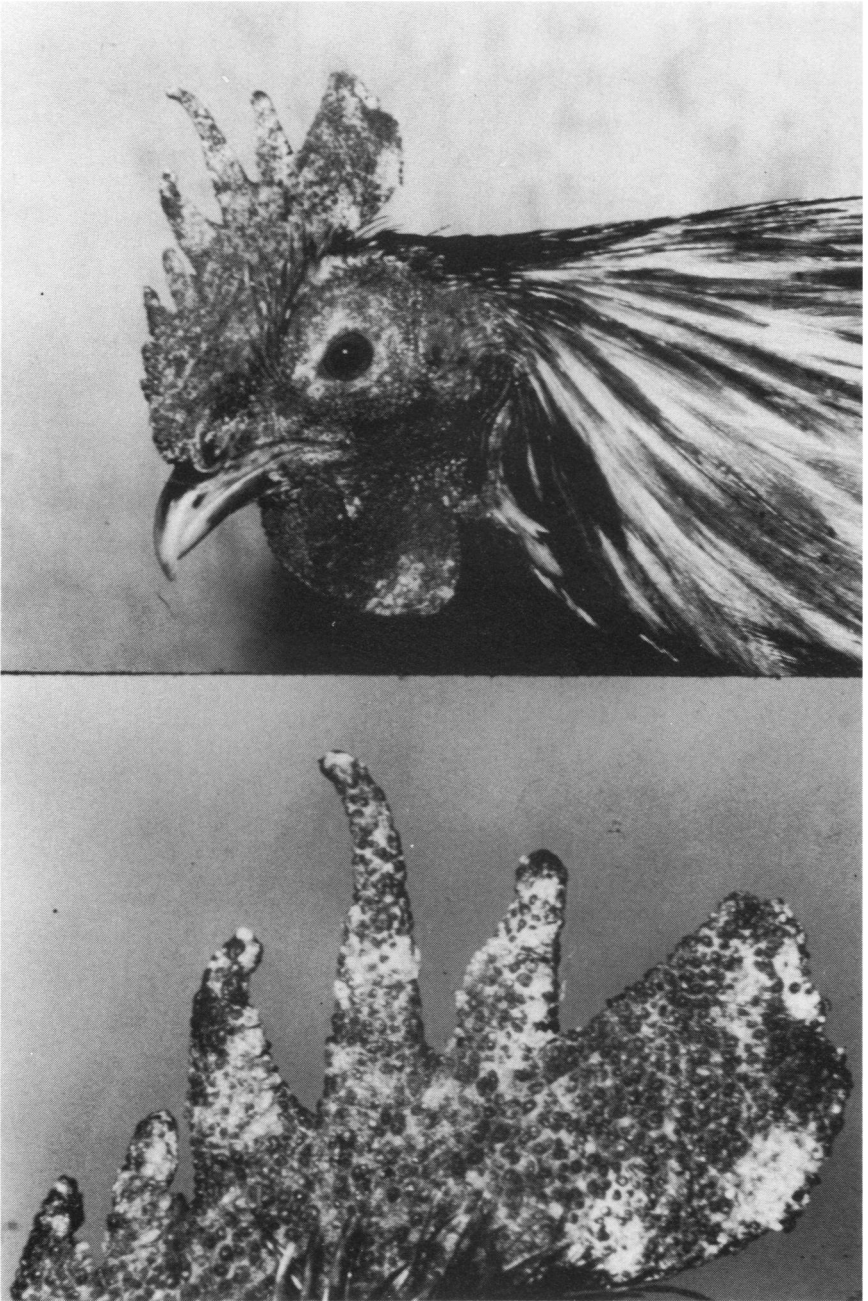


Fig. 1. Lesions in the comb and wattles of the fighting cock (Photo by M. T. Saborio).

bacteria, complicating the original signs (2). The feathers are not affected (2,6). The infection has been reported in America, Europe, Oceania, and Africa and is possibly present throughout the world (5). The ringworm caused by *M. gallinae* has been reported in chickens, doves, turkeys, quail, cats, dogs, laboratory mice, monkeys, and humans (1). The present case report describes favus in a fighting cock.

CASE REPORT

Gross lesions. A 1-year-old fighting cock was referred to the Avian Pathology Department at the Universidad Nacional, Heredia, Costa Rica, with yellow-white lesions in the comb and wattles (Fig. 1). The lesions separated off easily, leaving an open erythematous surface. The feathers were not affected. Scales from the lesions were mounted in 10% potassium hydroxide, and abundant mycelian elements with a few arthrospores were found.

Histopathology. Mycotic infection was suspected, so a biopsy of the comb was taken for histopathological study. Hematoxylin-and-eosin-stained sections revealed hyperkeratosis without an inflammatory reaction. When stained with periodic acid-Schiff, the tissues showed longitudinal and transverse red hyphae in the hyperkeratotic layer (Fig. 2).

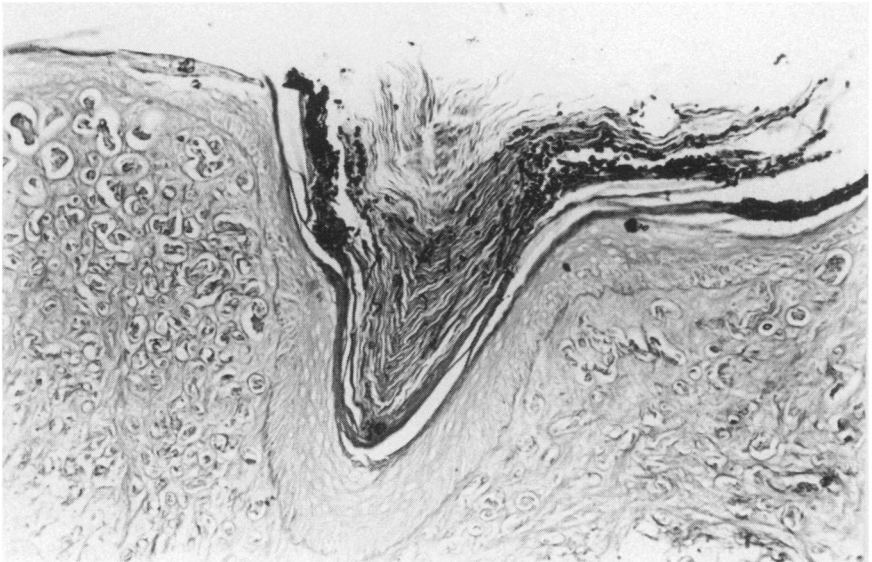


Fig. 2. Photomicrograph of the comb with longitudinal and transverse hyphae in the hyperkeratotic layer. Periodic acid-Schiff. 133X.

Mycology. The fungus was isolated in Mycosel plates (BBL, Cockeysville, Maryland) inoculated with scales from the comb and wattles. After 7 days incubation at 25 C, white cotton-like colonies were observed, which became pink as they matured. Sometimes this pink pigment was lost during reinoculation onto another Mycosel plate.

Microscopically, the colonies presented mycelium, microaleurospores, macroaleurospores, and a few chlamydospores. The majority of these macroaleurospores had smooth walls, and some presented rough outer walls (Fig. 3). The fungus was classified as *Microsporium gallinae*.

DISCUSSION

Infections caused by this dermatophyte are infrequent, and isolations are reported only occasionally in veterinary medical literature (1,2,5). Gallinaceous birds are affected more often than other animals. In birds, *M. gallinae* is the principal agent of favus (2).

The pathology department of this university has received approximately 4,000 submissions from many chicken farms with possible favus and other diseases. The present is the only diagnosed

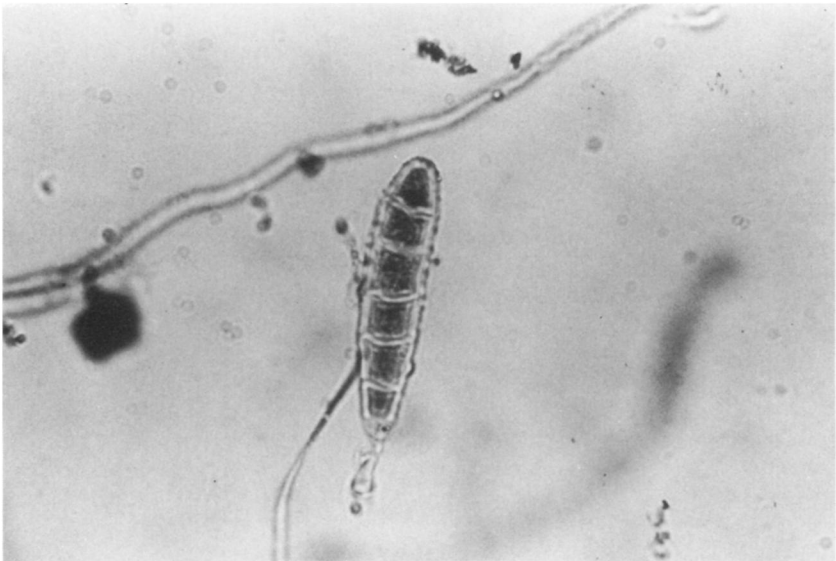


Fig. 3. Photomicrograph of the macroaleurospores of *M. gallinae* with rough walls. 690X.

case of tinea or favus cause by *M. gallinae*, which suggests the sporadic occurrence of this mycosis.

This dermatophytosis may become chronic if not treated, or it may be self-limiting and self-curing after several months. However, in this case the cock was treated topically with tolnaftate (Tinaderm, Kenilworth, New Jersey) and orally with griseofulvin (Mycostatin, Laboratorio Farmaceutico Squibb, Guatemala) at a dose of 5 mg/kg daily for 4 days, after which the lesion was clinically cured.

REFERENCES

1. Carter, G. Diagnostic procedures in veterinary bacteriology and mycology, 3rd ed. Charles C. Thomas, Springfield, Illinois. 292 pp. 1979.
2. Chute, H. L. Fungal infection. In: Diseases of poultry, 7th ed. M. S. Hofstad, B. W. Calnek, C. F. Helmboldt, W. M. Reid, and H. W. Yoder, Jr., eds. Iowa State University Press, Ames. pp. 374-375. 1978.
3. Emmons, C. W., C. H. Binford, J. P. Utz, and K. J. Kowon-Chung. Medical mycology, 3rd ed. Lea and Febiger, Philadelphia. 151 pp. 1977.
4. Gordon, M. A., and G. N. Little. Trichophyton (*Microsporum*) *gallinae* ringworm in a monkey. *Sabouraudia* 6:207-212. 1968.
5. Londero, A. T., C. D. Ramos, and D. Fischman. Four epizootics of Trichophyton *gallinae* infection on chickens in Brazil. *Mykosen* 12:31-38. 1969.
6. Rippon, J. W. Medical mycology. The pathogenic fungus and the pathogenic actinomycete. Saunders Company, Philadelphia, London, Toronto. pp. 142-143. 1974.