1:100, but there was none with 0.4 ml. The dose was then increased by 0.1 to 0.2 ml. daily, but a further reaction occurred with 0.4 ml. of pure old tuberculin. 0.1 ml. of the same strength was given without incident and the dose was increased by 0.05 ml. daily.

After seven weeks 1 ml. of old tuberculin was given without incident, and this was continued daily while the prednisolone was gradually withdrawn over the next two weeks. The injections of pure tuberculin gave no reaction intramuscularly or intradermally when the prednisolone was withdrawn, and he was discharged 10 weeks after desensitization had begun. P.A.S. and isoniazid were discontinued soon after. During the whole course of treatment no fresh phlyctenules appeared.

To maintain the desensitized state, 1 ml. of pure old tuberculin was given intramuscularly each week. It was intended to continue the tuberculin injections for a year, to ensure that no phlyctenules recurred. In April, 1958, the patient had to be admitted to another hospital after breaking his ankle, and inadvertently no further injections were given. When he was seen in May, he was well and tuberculin injections were not started again. He had had 1 ml. weekly for nine months. He was seen again in November, 1958, and remained well. A Heaf test at this time showed slight return of sensitivity to tuberculin (grade 1). There had been no attack of phlyctenular kerato-conjunctivitis for one and a half years since April, 1957. Before treatment there had usually been seven or eight attacks during a similar period of time.

Discussion

The treatment of severe and recurrent phlyctenular kerato-conjunctivitis has usually been on empirical lines. Most authorities recommend general hygienic and nutritive measures. Antituberculous chemotherapy has been said to be curative (Woods, 1951; Arruda, 1953). It certainly had no effect alone in the above case; further, the hypersensitivity which is responsible for phlyctenular kerato-conjunctivitis may persist even when only dead tubercle bacilli remain. Local treatment with cortisone has a palliative value but does not prevent further attacks. Courses of tuberculin have been recommended (Duke-Elder, 1938), and desensitization has sometimes been attempted (Woods, 1949, 1951).

In the above case it was rational to desensitize to the offending allergen, tuberculo-protein. Probably the prednisolone which was also given depressed tuberculin sensitivity and allowed the patient to be desensitized quickly and easily. There were several reactions to tuberculin during treatment, so that it is unlikely that systemic corticosteroids given alone would have prevented further attacks of kerato-conjunctivitis, while they could have suppressed tuberculin sensitivity only temporarily. It is possible that the attacks may have ceased spontaneously, but this seems very unlikely, given the five years of frequent recurrences, with the appearance of three fresh phlyctenules shortly before desensitization was begun.

Desensitization to tuberculin can be recommended only in patients with severe and recurrent phlyctenules. The treatment usually takes at least several weeks, and reactions can be unpleasant or even dangerous, particularly in inexperienced hands. In mild cases there may be only few recurrences or complications and local treatment is sufficient. In the above case there were frequent recurrences over five years and much disturbance of normal life. These justified the 10 weeks in hospital that were needed to obtain what appears to be permanent cure.

Summary

A boy aged 11 had had more than 20 attacks of phlyctenular kerato-conjunctivitis. These were manifestations of hypersensitivity to tuberculo-protein, because there were calcified tuberculous pulmonary lesions and the tuberculin test was positive to O.T. 0.1 unit (1:100,000). Local and general treatment, and also antituberculous drugs, had not prevented recurrences. He was slowly desensitized to tuberculin under a cover of prednisolone, and 1 ml. of tuberculin was given weekly for nine months to maintain the desensitized state. No phlyctenules have appeared since treatment started and for the nine months since it was stopped.

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MONILIAL GRANULOMA

BY

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This report deals with a case of monilial granuloma, a severe therapy-resistant mycotic infection, due to *Candida albicans*. The mycological and histopathological findings are also discussed.

Case Report

A 5-year-old girl was seen in May, 1957, with growths on the scalp which had first been noticed towards the end of April, 1957. During the preceding eight months she had been treated for malnutrition and oral thrush at a children's hospital. Her history, and that of her family, could not be elicited.

Examination showed a malnourished pale child. The anterior two-thirds of the scalp (Fig. 1) was covered with thick, hard, greyish-yellow crusts, which when removed revealed a granulating, freely bleeding base. The crusts were round, concave, and saucer-like, and adhered fairly closely to the skin, and here and there they were pierced by single hairs. The eruption on the scalp was diagnosed as staphylococcal impetigo, favus, and chronic lupoid sycosis prior to the receipt of the microscopical and cultural findings. Lesions without crusts were seen on the neck, shoulders, and upper part of the back and chest. The commissures of the mouth were fissured and the mucous membrane was covered with a thick greyish-white exudate. The nail of the left middle finger was affected.

On December 11, 1956, she was Mantoux positive—6 mm. X-ray examination of the chest on March 7 and August 17, 1957, and on May 9, 1958, showed no abnormalities.

Mycological Findings.—Potassium hydroxide preparation of scrapings taken from the scalp and neck lesions revealed a tremendous amount of fine, straight, poorly refractile hyphae. There were also larger circular bodies with thick walls, obviously chlamydospores, which were attached to short curved hyphae (Fig. 2). The hair, under potassium hydroxide, contained no hyphae, spores, or air bubbles. The preparations from the mouth contained a considerable number of interwoven filaments. Culture on Sabouraud's dextrose agar yielded a growth of flat, smooth, whitish

colonies with a yeasty odour. Fungus did not grow from hair which was cleared of all crusts. Slide cultures using corn-meal agar showed a great number of chlamydospores. The organism fermented glucose and maltose with the formation of acid and gas, and lactose with the formation of acid only; it did not ferment sucrose.

Histological Examination.—Macroscopic examination showed a nodular papilloma with cornification of the surface. Microscopically the surface consisted of laminated wavy cornified material, and cells were found immediately under this cornifying surface. The Malpighian layer was thickened and was seen to pass down in large blunt growths. Normal-looking hairs and hair follicles were seen passing through. Areas of necrosis were present, mostly round hair follicles. The Hotchkiss-MacManus stain revealed a great many mycelia throughout the section (Fig. 3).

FIG. 1.—Photograph showing anterior two-thirds of scalp covered with crusts.

FIG. 2.—Section showing poorly refractile hyphae and large circular bodies, obviously chlamydospores. Potassium hydroxide preparation.

FIG. 3.—Section of the crust, showing an abundance of mycelia.

Pathogenicity.—A saline suspension of the organism was injected into the ear vein of a rabbit. The animal died after six days, and at necropsy the kidneys were swollen and studded with abscesses, from which organisms were recovered. It was therefore concluded that the eruption was due to infection by *C. albicans*. These findings were confirmed by Dr. R. W. Riddell, Institute of Dermatology, London, and Dr. J. Walker, Mycology Reference Laboratory, London.

Comment

Monilial granuloma caused by *C. albicans* is a rare specific entity. The case reported by Hauser and Rothman (1950) was strikingly similar to the present case. Their review of all available earlier literature on the

subject referred to only 13 other related cases. Another case of generalized moniliasis was reported at a meeting of the Minnesota Dermatological Society (1953). Analysis of all these 16 cases showed that

the age of onset was always in early childhood. In six cases the eruption appeared during the first year of life, in the remainder before the fifth year. The sexes were equally susceptible to infection. Of the earlier 15 patients, 14 were white and one a negro. The primary site of infection was the oral mucous membrane in seven cases, the scalp or face in six. In two cases the original site was not reported. In the case under review it was evident that the infection started in the mouth.

In all biopsies of the granuloma it was found that there was a tremendous proliferation of the organism in the infected site, in contrast to the common types of moniliasis, in which it was often difficult to demonstrate the organism in direct preparations.

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STENOSING TENOSYNOVITIS OF THE COMMON PERONEAL TENDON SHEATH

BY

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In view of the rarity of stenosing tenosynovitis of the common peroneal tendon sheath it is thought worth while to record the following case. Two previous cases were reported by Parvin and Ford (1956).

Case Report

The patient, a female Eurasian aged 45, was employed as a nurse. She complained of pain and swelling of the left ankle which had persisted for three months. The pain was felt only when she was walking; she could still stand without discomfort. The onset had been gradual and no injury had occurred.

On examination her general condition was good. She had a tender swelling below and behind the external malleolus of the left ankle in the line of the peroneal tendons. There was a full range of movement at the ankle and mid-tarsal joints, and pain was produced only on maximum inversion; the location of the pain was just behind the tip of the external malleolus.

Investigations.—White blood cells, 7,800 per c.mm. (polymorphs 69%, lymphocytes 26%, neutrophils 2%, eosinophils 3%); haemoglobin, 85%; total red cells, 4,200,000. Urine, nothing abnormal on routine examination. E.S.R., 9 mm. in first hour. Chest x-ray film was within normal limits and ankle film was normal.

It was considered clinically that the condition closely resembled the common stenosing tenosynovitis at the wrist and it was decided to make an exploration.

Operation.—This was performed on January 11, 1957, under general anaesthesia, and a tourniquet was used. An incision 3 in. (7.5 cm.) long was made in the line of the peroneal tendons from behind the external malleolus to below and just in front of it. It was immediately obvious that the inferior peroneal retinaculum was grossly thickened. A little further investigation showed a marked swelling of the tendon of peroneus brevis, just proximal to the retinaculum; the tendon sheath was thickened and lined with a velvety brown tissue (Fig. 1). The tendon of peroneus