3. Title: Gibbon Mycotic Dermatitis

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OBJECTIVE

The objective of this study is to specifically identify the etiological agent responsible for the widespread occurrence of dermatomycosis in the gibbon colony and to find methods of effectively treating this condition.

DESCRIPTION

Dermatomycosis is the most common of all clinical problems that occur within the gibbon colony. Single or multiple lesions may occur in most areas of the body, but the limbs, neck, and head are the most frequently affected areas. The lesions consist of circular areas of alopecia which are rarely inflamed and seldom seem to cause discomfort to the animal. The skin of the lesion is slightly thickened and darkened, although the surface may sometimes have a dusty white appearance. Although a variety of classical topical remedies such as crystal violet and sulfur ointment have been used for treating these infections, the results were inconsistent and the treatment methods have been time consuming. Therefore, a systematic study was designed to determine the specific cause of this condition and evaluate the most promising methods of treatment. Lesions that occur on gibbons are biopsied and cultured both before and following treatment. Cultures are made on Mycobiotic Agar (Difco) with skin scrapings and brushings picked up from the lesion with sterile scrub brushes. Biopsies are made by taking a thin section of skin from the margin of the lesion and examining it histologically. A diagnosis of dermatomycosis is made when histological and cultural findings are mutually supporting. By comparing the histopathological and cultural findings as well as clinical observations, it is possible to evaluate how sensitive the condition is to the treatment employed.

PROGRESS

Griseofulvin has been widely accepted as an effective antibiotic for the treatment of many cases of mycotic dermatitis in both animals and man. Ten gibbons with typical lesions were therefore selected to evaluate the effectiveness of griseofulvin treatment. Histopathological examination of the biopsies taken from the lesions showed that hair follicles contained spores and that hair shafts contained both spores and hyphae. The spores and hyphae stained deeply with Gomori's Methenamine Silver stain and by the Periodic Acid Schiff method. There was usually no inflammatory infiltrate in the tissues except where the spores were seen in the epidermal cells lining the hair follicle. In this case, folliculitis usually occurred which consisted of polymorphonuclear cells in the follicles and diffuse aggregates of macrophages and plasma cells localized around vessels in the area. In every case Microsporum canis was isolated from the lesions of the ten animals. Griseofulvin was given to six of ten animals according to the method described by Al—Doory et. al. (J. of Am. Vet. Med. Assn., 1968; 153) at a dose of 100 mg. per pound of body weight. Treatments were given every ten days for a period of four treatments. Ten days following the final treatment the lesions were again evaluated clinically and biopsies and cultures were taken from the site of the lesion. In the six animals that had received the treatment, four animals appeared to be clinically improved and two animals no longer had lesions. In each of these cases it was still possible to isolate Microspoum canis from the site of the lesion. In the two cases where lesions had healed it was also possible to see both spores and hyphae in the histologic section of the biopsy. Surprisingly, in the four improved cases hyphae and spores were not observed even though lesions were still present. Among the untreated control group one animal appeared to be unimproved, but among the remainder of the animals

two cases appeared to be improved, and in one case the lesion appeared to be healed. Again it was possible to isolate Microsporum canis from the site of each lesion. In the two cases where improvement had occurred there were no longer spores around the hair shaft nor were hyphae or spores observed within the hair shaft. Like the treated group, both spores and hyphae were present in the case where lesions appeared to be healed.

This study shows that griseofulvin may not be effective for the treatment of Microsporum canis dermatomycosis in the gibbon even though its effectiveness for treatment of this condition in other animals and humans is well established. From the spontaneous improvement of lesions observed in the control group it appears likely that some lesions heal spontaneously although there seems to be a seasonal effect on the appearance of ringworm lesions in the gibbons. Clinical experience has indicated that lesions become more severe and more persistent during the warm season of the year. Further work on this study will be devoted towards the evaluation of other anti—fungal drugs in the treatment of gibbon dermatomycosis. "Tenactin" (Schering) has been reported to be an effective topical treatment for Microsporum canis and other fungal skin pathogens. A quantity of this drug has been ordered and will be evaluated as soon as possible.