CONJUNCTIVAL POLYP CAUSED BY RHINOSPORIDIUM SEEBERI

REPORT OF A CASE

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Rhinosporidiosis is a localized disease of mucous membranes, principally found on the mucous membranes of nasal passages. It has also been described as occurring in the mucous membranes of the eye and other parts of the body. The disease is caused by Rhinosporidium seeberi, which has the morphologic characteristics of a fungus, but so far neither culture nor transfer of the fungus from human tissue to cold-blooded or warm-blooded animals has been possible. The description of its life cycle is therefore based on the morphologic appearance of various stages in tissue sections stained with either hematoxylin and eosin or periodic acid-Schiff.

The following case is presented because of the rare occurrence of this disease in the United States.

CLINICAL HISTORY

A 10-year-old Negro girl was seen at the Eugene Talmadge Memorial Hospital on April 17, 1967, complaining of a mass in the right eye which had been present for 2 months. This caused no pain, but it consistently grew larger. It extruded from the nasal portion of palpebral fissure of the right eye, was an 8 by 4 mm., pink, pedunculated, granular lesion, attached by a narrow stalk to the nasal conjunctiva between the limbus and the caruncle. Slit lamp examination showed numerous vessels extending through this stalk into the mass. It was surgically removed (Fig. 1).

MORPHOLOGIC EXAMINATION

Histologic examination revealed chronically inflamed granulation tissue covered by squamous conjunctival epithelium (Fig. 2). Within the stroma there were numerous cysts varying from 20 to several hundred micra in diameter. The cysts were either empty or filled with a granular, floccular, poorly staining material, had doubly refractile hyaline walls, and were mostly surrounded by lymphocytes and plasma cells. A slight degree of pseudoepitheliomatous hyperplasia was also present, and intraepithelially numerous well circumscribed, small abscesses were noted. Some of the larger cysts contained numerous spores (Fig. 3). One such cyst, recently ruptured, was discharging spores into the surrounding connective tissue (Fig. 4). The inflammatory reaction in the connective tissue surrounding the spores consisted of polymorphonuclear leukocytes.

Once the spores contained within the cyst have been discharged into the tissue the empty shell is invaded by polymorphonuclear leukocytes which digest the shell (Fig. 5). The spores vary in size; some are grapelike aggregates of four nuclei; others are exceedingly small, about 2¿t in greatest dimension, and comma-shaped. In the tissue some of these spores continue to grow and develop into cysts. As the cysts increase in size, the capsule stretches and thins out until the point of rupture is reached.

DISCUSSION

The interesting morphologic feature in this condition is the similarity of the tissue reaction to that seen in coccidioidomycosis. In that disease, too, during the cyst phase the inflammatory reaction is of a more chronic nature, consisting of plasma cells, lymphocytes, and occasionally giant cells, but during the stage of discharge of the spores into the surrounding tissue the inflammatory reaction is acute and exudative.
In our material we have observed only a slight granulomatous response, consisting of epithelioid and multinucleated giant cells, which seemed to be the predominant reactive cells in the case described by Khaleque.4

We have but little information about the habitat of the patient. She is from rural central Georgia and lives on a farm. Whether she has had contact with livestock or with other people who have similar lesions of the eyes or nasal passages, or both, has not been determined. Some reports suggest that transmission is either by water or through contact with animals such as cattle or mules.

Men are affected more often than women. Ocular lesions are not as common as nasal lesions (20:80%), but nasal and ocular lesions together account for the majority of all cases reported. The eye lesions involve the conjunctiva most often, although occasionally the lacrimal glands and the canaliculus are also involved. Lid and scleral involvement, although rare, has been reported.5 From statements in the literature it would seem that most eye lesions are considered to be primary and only a few are secondary to nasal lesions. Surgical excision is the treatment of choice and apparently is curative.

To our knowledge, this is the first case of ocular rhinosporidiosis in Georgia. From the few cases that have been reported in the United States, a geographic prevalence is not apparent. Of the approximately 600 cases reported in the world literature, the majority have occurred in India and Ceylon.6 Cases have also been reported from Continental and Eastern Europe, including Russia, Africa, and South America.

The term rhinosporidiosis is of course incorrect when the lesion occurs in the coverings of the eye. Several authors have suggested that the disease when limited to the eye should be called oculosporidiosis caused by Rhinosporidium seeberi.5
FIG. 2 (upper left). Low power view of section of conjunctiva. A slight pseudoepitheliomatous hyperplasia is seen. In the underlying stroma there are numerous cysts surrounded by lymphocytes and plasma cells.

FIG. 3 (upper right). High power magnification of wall of large cyst containing spores in various stages of development.

FIG. 4 (lower left). Extreme thinning of capsule of the cyst, rupture, and discharge of spores into the surrounding connective tissue. The spores incite an acute inflammatory reaction.

FIG. 5 (lower right). Following discharge of the organism, the capsule is digested by polymorphonuclear leukocytes.
SUMMARY

The clinical and morphologic features of a case of oculosporidiosis caused by Rhinosporidium seeberi have been described. This is the first case reported from Georgia. The tissue reactions to this organism, which so far has not been cultured, are similar to those occurring in coccidioidomycosis. A brief review of the known data and the literature concerning this unusual organism, which is presumably a fungus, is presented.

REFERENCES