

Rhinosporidiosis in Zambia

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SUMMARY

Thirty-two cases of rhinosporidiosis are reported for the first time in Zambia. The epidemiology, clinico-pathological aspect and diagnosis is discussed. The study indicates that rhinosporidiosis is endemic in Zambia and awareness of the disease may bring to light actual prevalence in this region of Africa.

INTRODUCTION

Rhinosporidiosis is a chronic granulomatous localized disease which predominantly affects the nasal mucosa and conjunctiva. It may occur in the ears, larynx, nasopharynx, skin and genitalia. The disease has been reported in various parts of the world, but most of the cases have been reported from India, Sri Lanka and very few from Africa (Wahab and Talaat, 1976). The epidemiology, prevalence, clinical features and pathology have never been reported from Zambia. Consequently, we wish to report largest number of cases from Africa among Zambian Africans.

MATERIALS AND METHODS

The Department of Pathology and Microbiology, University Teaching Hospital, Lusaka provides the routine histopathological services to the hospitals of Eastern, Western, Southern and Central Provinces of Zambia. These cover approximately 55% of the population of Zambia. All biopsies received during a

nine-year period (1971-1979) were reviewed. Sections were stained routinely with haemotoxylineosin, PAS and Grocott. Cultures were not performed. Clinical information was obtained in most cases from the biopsy request forms and in few from personal observations.

RESULTS

During the three-year period (1977-1979) we encountered 32 cases of histologically proven rhinosporidiosis (Table 1). Most cases were seen in children. There were 26 males and 6 females giving a ratio of 4.3 to 1. The youngest patient was four years and the oldest 30 years. The primary lesions were either present in eye (62.5%) or nose (37.5%). Fifteen cases were from the Central and ten from Eastern Province. The remaining seven cases came from various outlying hospitals of Southern Province. There was no evidence of clustering of cases in any one geographic locality. The details of home addresses, occupation and neighbourhood of lakes, stagnant ponds and streams and contact with infected animals were not available.

CLINICO-PATHOLOGICAL FEATURES

The clinical data were inadequate in most of the cases. However, most of them presented with friable, vascular, sessile or pedimentated polypoid mass in eye or nostril. The duration of lesion vary from seven days to one year. Most of the cases have

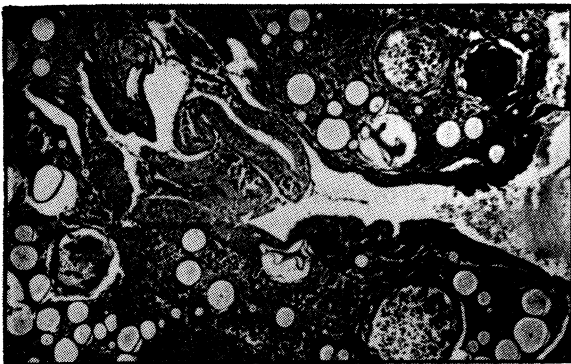
TABLE I
AGE, SEX, SITE AND GEOGRAPHIC
DISTRIBUTION OF RHINOSPORIDIOSIS IN
32 CASES

Age in Years	Sex		Sites Affected		Provinces		
	M	F	Eye	Nostril	Central	Eastern	Southern
0-4	1	1	2	—	—	2	—
5-9	7	2	6	3	4	4	1
10-14	10	3	8	5	8	2	3
15-19	4	—	1	3	2	1	1
20-30	4	—	3	1	1	1	2
TOTALS	26	6	20	12	15	10	7

two to five months duration. Clinically they were diagnosed as rhinosporidiosis, papilloma, haemangioma, inflammatory polyp, rhinoscleroma or malignant tumour. However, seventy percent of cases were diagnosed as rhinosporidiosis. Excision biopsy was treatment of choice in most cases.

The histological appearances were similar in all the cases. Rhinosporidiosis produces a characteristic acute and chronic inflammatory reaction with many neutrophils, lymphocytes, plasma cells and macrophages in rather denser fibrous stroma. The presence of numerous spores and sporangia measuring from 8 to 300 micron in diameter in the stroma constitute the pathognomonic feature of rhinosporidiosis (Fig 1). The sporangia appear cystic and have sharply defined

Fig. 1



Rhinosporidiosis; showing the typical histological features of sporangia, spores and inflammatory cells (haematoxylin eosin x 222).

thick wall. Some of them may be empty and contained amorphous or granular material. Many were filled with numerous endospores which measured 5 to 8 micron in diameter. The walls of sporangia and

spores stained positively with PAS and Grocott. The spores have a basophilic karyosome and may show 5 or more globular eosinophilic bodies. A foreign body giant cell reaction was seen around ruptured sporangia in few cases. Depending on the site of lesion the surface epithelium may be squamous or stratified columnar. The surface epithelium may be atrophic, ulcerated or hyperplastic and contained sporangia in few cases.

DISCUSSION

The causative agent, *Rhinosporidium seeberi* is now generally accepted as a fungus of the sub-order Chytridineae of the Phycmycete (Tamale and Hutt, 1964). Tamale and Hutt 1964, Emmons et al 1970 and Cameron et al 1973 have pointed out that the fungus has not been grown successfully on culture media and has not induce disease in animals. The life cycle of *R. seeberi* outside human host is not known. Man-to-man transmission does not occur. Infection may follow contact with animals particularly horses and cows. Water is considered as most likely source and reservoir of infection. Fish and water insects may also act as hosts of the fungus. The disease is thought to be transmitted by infected water and inhalation (Wahab and Talaat 1976). It is not possible to ascertain the source of infection and mode of transmission in our cases due to lack of information.

Nearly eighty per cent of cases were reported from India, Sri Lanka, South and North America (Ash and Spitz, 1945). Sporadic cases have been noted in Asia, Europe and Africa. The first case in Africa was reported in an Ugandan male in 1941 and subsequently very few cases have been reported from Africa (Tamale and Hutt, 1964, Cameron et al Wahab and Talaat 1976). The present study reported largest number of cases in Africa. One of the authors (KGN) had seen two cases in Asian expatriate in 1972 and 1974 and one case in African in 1973. Then suddenly 32 cases have been seen within three-year period (1977-1979). It is unlikely that many cases were missed between 1971-1976. There is no satisfactory explanation available to explain this finding. It needs detailed epidemiological prospective study. The geographic distribution shows most of our cases came from Central and Eastern Province of Zambia. Our cases were presented in widely separated hospitals in all provinces and suggest sporadicity of disease in Zambia.

The age and sex pattern observed in the present study was similar to that noted elsewhere in Africa (Tamale and Hutt 1964, Cameron et al 1973, Wahab

and Talaat 1976). The age distribution differs from Indian cases where the greatest incidence was noted in age group 21-30 years (Agarwall 1966). The world literature (Agarwall 1966, Emmons et al 1970, Wahab and Talaat 1976) indicate that primary lesion occurs most frequently in the nasal cavity. In contrast, significantly most of our cases (62.5%) presented with polypoid mass in eye. Nasopharynx, lips, palate, tonsil, larynx, bronchi, genitalia, rectum and skin were not involved. This clinical presentation is difficult to explain in view of incomplete information.

The diagnosis of Rhinosporidiosis was easily established in biopsy material with haematoxylin and eosin sections due to presence of spores and sporangia. Special stains are not required for a diagnosis. The large size of the sporangia differentiates rhinosporidiosis from the smaller spherules of *Coccidioides immitis*. Spores may be seen in the nasal secretions, eye washing or sputum but examination of tissue sections is the usual method of diagnosis.

Excisional surgical removal or cauterisation is the treatment of choice. Recurrence follows incomplete removal.

The present study has established the widespread nature of the disease in Zambia. It is hoped that this communication will stimulate greater awareness of the disease in Zambia and help to establish the true epidemiology and clinical presentation of rhinosporidiosis.

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