

Cutaneous Rhinosporidiosis Masquerading as a Soft Tissue Tumour Diagnosed on FNAC

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Abstract

Background: Rhinosporidiosis refers to a granulomatous inflammation of mucocutaneous sites caused by *Rhinosporidium seeberi*, presenting most frequently as polypoidal lesions in the nose and nasal cavity. Involvement of sites like the conjunctiva, trachea, nasopharynx, skin, and genitourinary tract are rare. Cases of nasal rhinosporidiosis with satellite skin nodules around head and neck region has been reported. Primary cutaneous involvement is however extremely rare [1]. We report the case of a 58 year old male who came with complaints of anterior chest wall swelling since 2 months with sudden increase in size. The patient was sent for FNAC with a clinical diagnosis of a soft tissue tumor. FNAC however revealed sporangia of varying sizes with endospores along with foreign body giant cell reaction. Histopathological examination confirmed the diagnosis. Cutaneous rhinosporidiosis may mimic a soft tissue tumor. FNAC being a minimally invasive and less expensive procedure gave a definitive diagnosis, and also aided to initiate prompt management of the condition.

Keywords: Rhinosporidiosis, FNAC, Sporangia, endospores.

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INTRODUCTION

Rhinosporidiosis is caused by *rhinosporidium seeberi* which belongs to a novel group of fish parasites referred to as the DRIP clade (*Dermocystidium*, *rosette agent*, *Ichthyophonus*, and *Porospermium*), near the animal fungal divergence.

The disease is endemic in India, but it has also been reported in other parts of the world. Rhinosporidiosis usually presents as pedunculated polypoidal soft tissue mass. Nose and nasopharynx being the most common sites involved, accounting for more than 70% cases. Subcutaneous tumour nodule presentation is extremely rare and often mimics a sarcoma [2].

Rhinosporidiosis is characterized by the development of polyps on the mucosa which may be soft, friable with typical strawberry like regions. Yellowish pin- head sized spots may be seen on their surfaces which represent the underlying mature

sporangia. The diagnosis is based on the cytological or histopathological demonstration of thick walled sporangia of varying sizes with numerous endospores. Endospores will escape through a break in the sporangia wall, forming empty collapsed forms [3].

CLINICAL HISTORY

We report the case of a 58 year old male who came with complaints of anterior chest wall swelling since 2 months with sudden increase in size. On examination, a 10 x 7 cm swelling left anterior chest wall, firm, non- mobile with surface blackish discoloration. Another swelling was present in the left arm, with similar features.

MACROSCOPY (Left chest wall and left arm swellings)- Skin covered nodular soft tissue mass weighing 80 gram, measuring 11.5 x 7.5 x 3.5 cm. Cut section- well circumscribed solid lesion with yellowish and hemorrhagic areas.

GROSS IMAGE



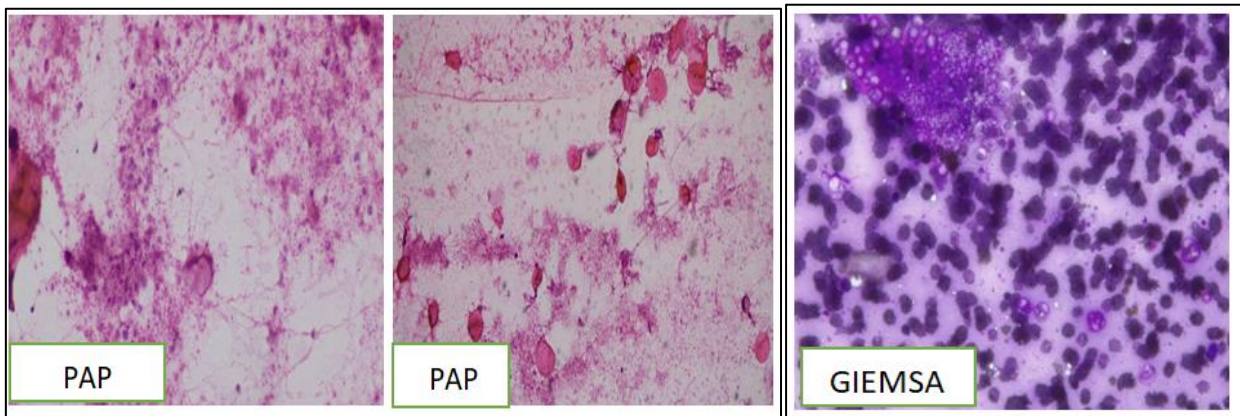
MICROSCOPY:

FNAC: Aspirated blood stained material- pap and giemsa stained smears show sporangia in varying stages of development and containing numerous endospores. Background shows chronic inflammation, suppuration and giant cell reaction.

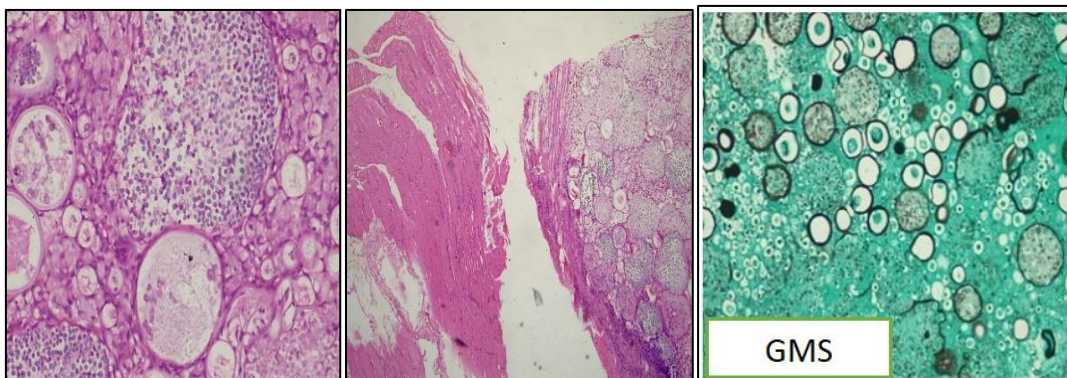
HISTOPATHOLOGY (Chest wall and arm):

Sections show skin with rhinosporidiosis in the sub-cutaneous tissue, with extensive foreign body reaction in the fibroadipose tissue. Special stain GMS highlighted the sporangia.

FNAC



HISTOPATHOLOGY



DISCUSSION

Rhinosporidiosis is primarily an infection of nasal mucosa and respiratory tract. Patients with nasal involvement often presents with masses leading to nasal obstruction or bleeding. Water and soil are presumed to be the reservoir of infection. The exact route of transmission of *Rhinosporidium* remains unclear, although it is presumed to be transmitted through the traumatized epithelium from the natural aquatic habitat, most commonly in nasal sites. No cases have been documented of cross- infection between members of the same family or between animals and humans [3].

Skin lesions however, manifest either due to direct inoculation or as satellite nodules around head and neck region due to hematogeneous spread of infection. Extra-nasal rhinosporidiosis is rare and often presents with cutaneous or sub-cutaneous nodular swelling, often associated with mucosal lesions. Disseminated cutaneous rhinosporidiosis has been reported in immunocompromised individuals.

Our case was that of a 58 year old male with no known comorbidities, presented with swelling in the anterior chest wall and left arm with no nasal manifestation. He gives a history of bathing in pond water. Ultrasonogram of the lesion was suggestive of a neoplasm and the patient was send for FNAC. FNAC revealed sporangia of varying sizes with endospores and foreign body reaction. Correlating with clinical history, a diagnosis of rhinosporidiosis was made. Histopathology confirmed the diagnosis.

Rhinosporidium seeberi on FNAC should be distinguished from *Coccidioides immitis*. The latter has similar mature stages represented by large, thick-walled, spherical structures containing endospores, but the spherules are smaller in size with a diameter of 20-80 μm and contain small endospores with a diameter of 2-4 μm [4-6]. The sporangia of rhinosporidiosis are large, thick-walled spherical structures with endospores which are seen in a fibromyxomatous or fibrous stroma containing chronic inflammatory cells, which include macrophages and lymphocytes [2].

Spontaneous regression of lesions rarely occur, and so cases of rhinosporidiosis should be treated early in order to prevent extension of lesions or dissemination.

Management includes diathermy excision of the mass. Recurrence has been reported with simple excision [7]. Medical treatment is not generally implicated in the management of rhinosporidiosis.

CONCLUSION

Our case highlights the occurrence of cutaneous rhinosporidiosis, especially without a concurrent nasal manifestation, which could very well mimic a soft tissue sarcoma clinically. FNAC enabled the prompt diagnosis as well as management of the condition.

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