

**Case Report**

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# Demodex Folliculorum In Nasal Discharge: A Case Report of Yet Unknown Significance



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## Abstract

Demodex mites are the parasites residing in the pilo-sebaceous follicle and sebaceous gland. They are frequently isolated from cases of folliculitis, Rosacea and various other inflammatory dermatoses. We report a possible case of demodocosis in patient of mucormycosis. Nasal scraping and discharge was negative for fungal elements but contained high density of gravid Demodex mites. The species was identified as Demodex folliculorum.

**Keywords:** Demodex mites; Demodocosis; Nasal scraping; Diabetes mellitus

## Introduction

Demodex mites are the normal inhabitants of pilosebaceous unit and gland. Demodex folliculorum and Demodex brevis are the two species found all over the body especially areas dense in sebaceous glands including face, neck, back and chest [1-3]. Previously thought to be harmless commensal they are now recently implicated as the causative agent of many dermatoses including pityriasis folliculorum, Rosacea, perioral dermatitis [4]. Studies also prove increased severity of demodocosis in immunocompromised individuals [5].

## Case Report

A 79 years old male patient got admitted to the hospital with symptoms of right sided facial swelling and redness of face since 4 days. He was known case of long standing uncontrolled diabetes with hypertension, chronic renal failure. Upon physical examination patient was drowsy, with right sided facial swelling of eyelid and cheek. Rest of the physical examination was within normal limits. Laboratory investigation revealed leukocytosis (32,000/cu mm), Raised levels of Urea (152 mg/dl), Creatinine (3.2). Blood sugar (BSL) random 375 mg/dl, BSL Fasting 130 mg/dl, BSL postprandial 420 mg/dl. Other parameters were within normal limits. Clinically suspected as a case of mucormycosis, laboratory sample in the form of nasal discharge and nasal scraping was sent for potassium hydroxide mount to microbiology department. The KOH mount was negative for fungal elements but showed presence of abundant Demodex mites.

Density was 10 -12 mites per low field. They were long approximately 0.3 -0.4 mm in size, semitransparent, with elongated body that consist of 2 fused segments, eight short legs attached to first body segment. Majority of them were gravid with eggs in posterior segments. The nasal secretion were inoculated

on SDA agar and incubated at 37C and 25C for 4 weeks. The culture was reported as negative. Diagnosis of mucormycosis was confirmed by biopsy of right middle meatus which showed presence of broad non septate hyphae with right angle branching. Demodex species was identified as that of Demodex folliculorum as it was longer than its counterpart D. brevis (Size 0.1 - 0.2 mm) [6]. Patient was started on IV Insulin, IV Amphotericin, and Antibiotics immediately on admission. Progress of patient could not be followed as patient succumbed to septicemia on 5<sup>th</sup> day of his admission.

## Discussion

Rhino cerebral mucormycosis is common complication seen in non-compliant diabetic patient. Species of Rhizopus, Mucor, Apophysomyces and Cunninghamella have being frequently isolated from cases of Rhino cerebral mucormycosis. In this case we report co infection of fungus with mite. The patient was elderly, immunosuppressed due to long standing diabetes mellitus and chronic renal failure. These factors predisposed development of mucormycosis as well as proliferation of Demodex mites. Demodex mites require immunosuppression to proliferate extensively on human body. Studies have indicated increased number of D.folliculorum in immunocompromised patients with end stage renal disease, Diabetes mellitus, Behcet's disease, urological cancers and eyelid basal cell carcinomas [7-11]. Infestation rate of Demodex mite has also increased with increasing age. Studies have shown an infestation rate of 95% in people aged more than 75 [12-13]. A further study to evaluate its role in the pathogenesis could not be done due to the loss of patient. Though the heavy density of D. folliculorum in the nasal discharge raises a suspicion about its role in causing inflammation at the site. As well as it

also points to the probable role of the mite in carrying the fungal spores in the sinuses [14].

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