Cytodiagnosis of primary cutaneous aspergillosis in an immunocompetent host

Sir,

Cutaneous aspergillosis is a rare disease and may occur as either primary or secondary infection. It is usually associated with the immunocompromised status of the host. Reports in literature of primary cutaneous aspergillosis in immunocompetent individuals are rare.

A 50-year-old male patient, in the wood transportation business, presented to surgery in the outpatient department (OPD) with a 4 cm × 4 cm cystic swelling at the right elbow for the past 15 years. Fine needle aspiration cytology (FNAC) using a 22-gauge needle was performed. A total of 3 cc pus was aspirated. Wet-fixed smears were stained with hematoxylin and eosin. The aspirate revealed presence of necrotic material with neutrophils, eosinophils, and histiocytes in which were scattered septate fungal hyphae that were branching at acute angles with the presence of ascospores [Figure 1a]. Wet mount preparation in 10% potassium hydroxide (KOH) showed the presence of these branching, septate hyphae with spores. Periodic acid-Schiff stain performed on the aspirate confirmed the presence of the fungus. The material was cultured in Sabouraud’s medium. However, it did not grow due to the fact that the fungus probably died within the cyst. Attempt to culture even after the excision proved futile, although, fungal hyphae could be clearly demonstrated in all samples. This is additionally supported by the fact that the patient did not have active inflammatory symptoms. The lesion was subsequently excised and histopathology too revealed the presence of a foreign body granuloma with the aspergillus fungal colonies [Figure 1b].

As culture was not successful from FNAC material and after excision, it was difficult to speciate the fungus, because speciation is based on slide culture and morphology.

Complete hemogram, fasting blood sugar levels, liver function tests, and renal function tests were within normal limits. Enzyme-linked immunosorbent assay (ELISA) test for human immunodeficiency virus (HIV) was negative. No other systemic disease or immunodeficiency was present.

Primary cutaneous aspergillosis is rare and when seen is usually associated with the immunocompromised status of the host.[1] The lesion may occur as a primary or a secondary infection.[2] The lesions usually occur at the site of trauma. For example, in a sick patient at the site of arm boards, tapes, or intravenous catheters.[1] However, primary cutaneous aspergillosis in an immunocompetent host is rare and has been reported in very few patients in literature.[1,3-5] The disease mostly has a favorable outcome.[1]

In the present case, the patient was in the wood transportation business. Since elbow is a common site for trauma, he might have developed the lesion by way of trauma. Laboratory tests ruled out any underlying disease.
Clinically, cutaneous aspergillosis may present as erythematous papules, plaques, nodules, or necrotic ulcers. Our patient however presented with a cystic nontender swelling in the right elbow region clinically resembling a bursa.

Diagnosis of cutaneous aspergillosis requires skin biopsy. Our case was diagnosed on FNAC and confirmed by special stains, i.e., KOH wet mount preparation and Periodic acid-Schiff stain. However, culture did not yield any growth perhaps due to the defensive response of the host that resulted in encystment and death of the fungus and less virulence of the fungus attenuated over the course of 10 years. Making an early diagnosis of primary cutaneous aspergillosis in an immunocompetent host is a clinical challenge. This case is presented to increase the awareness of the usefulness of FNAC for diagnosing fungal infections. Early diagnosis, a combination of surgical excision and systemic drug therapy, with antifungal drugs will help in achieving a cure and reduces chances of systemic dissemination.

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Conflicts of interest
There are no conflicts of interest.

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