Cutaneous Larva Migrans: Diagnosis on Fine Needle Aspiration

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Case Report

Abstract: Cutaneous larva migrans is a skin disease in humans caused by larva of nematode parasites of hookworm family. The diagnosis of Cutaneous larva migrans is based mainly on clinicalfeatures and history. On review of literature, there have been no recorded instances of cytological diagnosis of Cutaneous larva migrans. We are reporting a case of Cutaneouslarva migrans, which was diagnosed on fine needle aspiration.

Keywords: Cutaneous larva migrans, cytology, Fine needle aspiration.

Introduction

Cutaneous larva migrans is a type of dermatitis which is caused by invasion and migration of larva through skin[1]. The other names for this entity include creeping eruption, sand worm, plumbers itch and epidermatitis linearis migrans[1]. The larva of nematodes usually involved are Ancylostoma braziliense, Ancylostoma caninum, Necator americanus, Strongyloides stercoralis, Gnathostoma[7,8]. It can also be rarely due to insect larva[2].It is a disease of the tropics and subtropical areas[1].

Case History

Clinical findings: A 23 year old female patient presented with multiple subcutaneous nodules. There was waxing and waning of lesions. On examination, nodules were ill defined, fluctuant with some having surface ulceration.

Cytological Findings: Fine needle aspiration smears revealed a necrotizing granulomatous lesion with eosinophils and neutrophils. Smear studied showed a long refractile worm with thick cuticle, surrounded by neutrophils and histiocytes. Based on the presence of worm on FNA, a diagnosis of Cutaneous larva migrans was made and patient was started on antihelminthic therapy. On starting treatment, there was found to be a reduction in size and number of nodules.

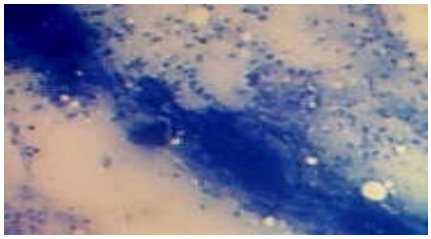

Figure 1: Refractile parasite surrounded by inflammation (MGG, 10x)

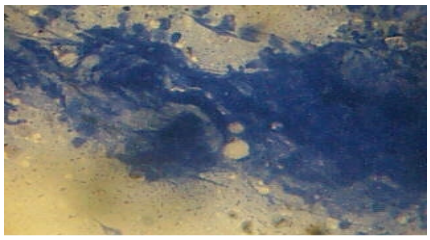

Figure 2: Refractile Parasite (MGG, 40x)

Histopathological findings: One nodule was excised during course of treatment. Tissue response in the form of a necrotizing inflammatory lesion with ill formed granulomas, neutrophils and eosinophils was observed. No parasite was found.

Figure 3: Deep dermal and subcutaneous inflammation (H&E,10x)

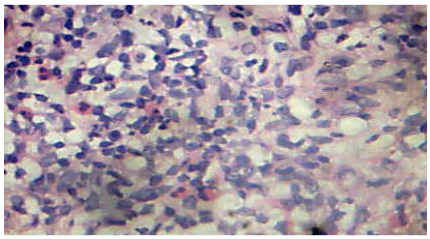

Figure 4: Eosinophilic and neutrophilic infiltration(H&E,40x)

Treatment

Following cytological diagnosis of cutaneous larva migrans, patient was started on T. Albendazole 400 mg orally for 1 week, following which patient had a complete recovery

Discussion

Pathogenesis

The clinical features of Cutaneous larva migrans are due to larva of nematodes penetrating skin[1]. The eggs are shed through feces of infected animals[1]. The larvae can

burrow through intact skin, that comes into contact with infected soil. Larval migration through skin occurs four days after penetration through skin[4]. The movement of larva is facilitated through production of hyaluronidase enzyme[5]. The migration of larva through skin induces dermatitis like reaction. Since the larva are unable to complete their life cycle in humans due to them being accidental hosts, the infection usually subsides[6].

Clinical features

The clinical features may range from non specific dermatitis to typical creeping eruption, with linear serpiginous or bizarre tracks[7]. Multiple vesicles are seen along the tracts. Severe itching is usually present, which may lead to secondary infection or other changes associated with dermatitis[7].

Diagnosis

Usually laboratory investigations do not contribute much in diagnosis of Cutaneous larva migrans[9]. Rarely patients may have eosinophilia or increased levels of Immunoglobulin E. On review of literature, there have been no instances of diagnosis on Fine needle aspiration of lesions. The histopathology of the lesion shows an empty tunnel with polymorphonuclear cell infiltrate consisting mainly of eosinophils and necrotic keratinocytes in the epidermis[8]. The larva is seldom seen in the tissue sections because the clinical lesion develops long after the larva has passed through[7]. Morphological assessment of the species of hook-worm larva on histopathological examination is not possible[7]. Epiluminescent microscopy is an effective and non-invasive method for diagnosis of Cutaneous larva migrans[9].

Treatment

Cutaneous larva migrans usually resolves by itself, usually within 1-6 months[10]. Treatment is usually required for the intense itching caused by presence of larva in skin[10]. Treatment options include surgery, cryotherapy, topical drugs and systemic therapy[10]. Among topical agents, 15% thiabendazole is effective, whereas Albendazole 400-800mg orally for 1 to 7 days, is now considered as first choice drug[4,5,6]. In our present case, the patient was started with T. Albendazole 400mg orally for one week, resulting in resolution of infection.

Conclusion

Cutaneous larva migrans is easily diagnosed, since the clinical features are typical and are rarely missed. On review of literature, there was found to be no instances of diagnosis of Cutaneous larva migrans on cytology. This case report highlights the use of Fine needle aspiration as additional diagnostic modality in the diagnosis of Cutaneous larva migrans

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