Case Report

Chronic Mucocutaneous Candidiasis

Abstract

Chronic mucocutaneous candidiasis is a rare entity characterized by isolated defective immunity against candida infection. It manifests with resistant and relapsing superficial candida infection affecting skin, hair, nails, and mucosae. Although serious invasive disease is uncommon, this condition produces considerable morbidity in the affected. Long-term antifungal treatment is the preferred option. We report a 3½-year-old female child who presented with chronic mucocutaneous candidiasis and who showed a gradual response to long-term treatment with itraconazole.

Keywords: *Child, chronic mucocutaneous candidiasis, itraconazole*

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Introduction

Chronic mucocutaneous candidiasis is characterized by recurrent and relapsing nail and mucocutaneous candidal infections and causes significant morbidity due to its chronic relapsing nature.[1,2] We hereby report a female child who presented with chronic mucocutaneous candidiasis presenting with facial erythema and photophobia.

Case Report

A 3½-year-old female child was referred to us as a case of facial cellulitis with diffuse erythema and edema of face and photophobia and watering from eyes of 1-month duration. The skin lesions were moderately pruritic; but painless. Constitutional symptoms were conspicuously absent. There was not any history of recurrent respiratory or gastrointestinal infections. She had no other skin lesions. None of her family members were similarly affected.

On clinical examination, the child had diffuse erythema and edema extending from forehead to upper lip area [Figure 1a]. The erythematous face lesion was studded with pustules and crusting. There was no tenderness or local rise of temperature. She had oral candidiasis [Figure 1b]. Her nails were normal.

There was no significant lymphadenopathy and systemic examination was within normal limits. Complete hemogram, peripheral smear study, erythrocyte sedimentation rate, C-reactive protein, urine microscopy, random blood sugar estimation, renal and liver function tests, chest radiography, and ultrasonogram of abdomen were within normal parameters. Serology for human immunodeficiency virus and antinuclear antibody profile were negative. Ophthalmologist ruled out any primary ocular pathology and attributed the photophobia to cutaneous inflammation. Soft tissue ultrasound of face lesion showed only dermal edema.

Pus culture was sterile. Potassium hydroxide preparation of scrapings from the skin lesion examined under microscope showed pseudohyphae and spores suggestive of candidiasis. Biopsy from the lesion showed dense inflammatory infiltrate mainly in the epidermis and upper dermis along with spores [Figure 2a and b]. Grocott's methenamine silver staining showed pseudohyphae and spores confirming the diagnosis as candidiasis [Figure 2c]. Negative Fontana-Masson stain ruled out diseases caused by dermataceous fungi. Fungal culture of tissue specimen in Sabouraud's agar grew candida albicans.

Her serum immunoglobulin, complement level, and CD4 count were normal. Flow cytometry analysis of blood was not suggestive of any deficiency in T cells or B cells suggesting resistant candida infection confined to skin, mucosa, and nails without evidence of any underlying immunodeficiency indicating an isolated

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immune deficit against candida infection. We arrived at the final diagnosis of chronic mucocutaneous candidiasis.

She received itraconazole 100 mg once a day per orally with topical clotrimazole cream and eye lubricants. The child showed steady improvement with complete resolution of oral thrush. The erythema and edema of face lesion subsided leaving a brownish plaque just below right eye, which showed more gradual resolution [Figure 3a]. Five months after staring itraconazole, she attained complete subsidence of face lesions [Figure 3b]. Itraconazole was tapered to alternate day dose and was discontinued after 1 month. This was followed by an a reappearance of lesions. Reintroduction of itraconazole with topical clotrimazole achieved relief and we plan to taper off itraconazole more gradually. Her serum cortisol, calcium, parathormone, and thyroid function test were within normal limits ruling out coexisting endocrinopathy.

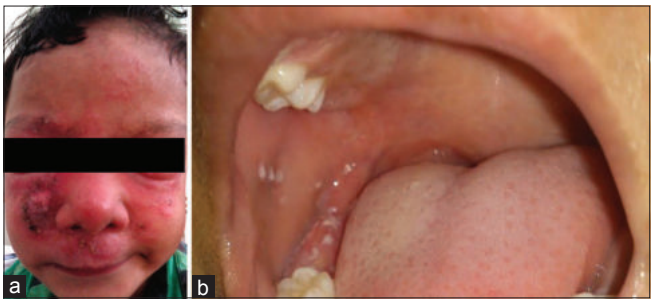

Figure 1: (a) Diffuse erythema and edema extending from the forehead to upper lip area with hyperpigmentation and crusting of right side of cheek in a child with chronic mucocutaneous candidiasis. (b) Oral candidiasis in the child with chronic mucocutaneous candidiasis

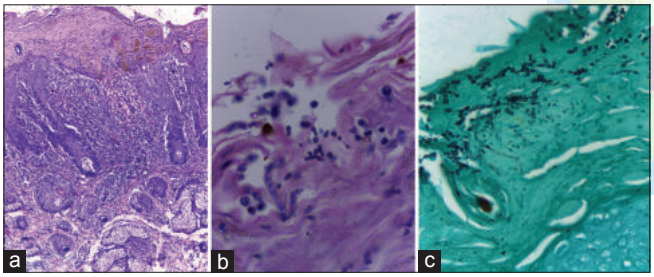

Figure 2: (a) Histology specimen from the face lesion showing neutrophil and plasma cell predominant dense inflammatory infiltrate mainly in the epidermis (H and E, ×100); (b) Higher magnification of the same showing inflammatory infiltrate along with refractile bodies in epidermis (H and E, ×1000); (c) Biopsy specimen revealing pseudohyphae and spores confirming the diagnosis of candidiasis (Grocott's methenamine silver stain, ×400)

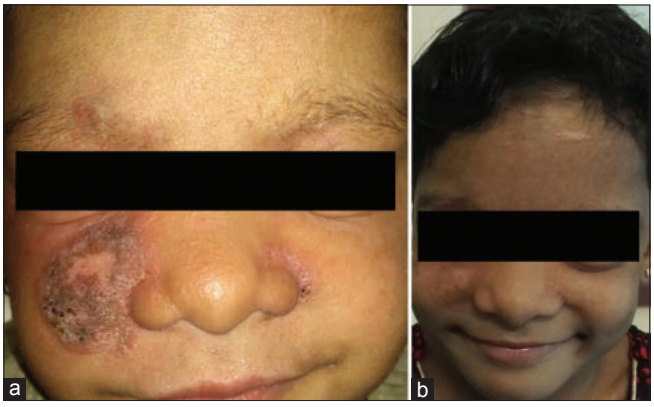

Figure 3: (a) Resolution of erythema and edema of face lesion leaving a brownish plaque below right eye; (b) Complete subsidence of face lesion

Discussion

Chronic mucocutaneous candidiasis usually appears in early childhood, unlike the congenital cutaneous candidiasis that manifests within the 1st week of life.[1-3] Isolated chronic mucocutaneous candidiasis can cause significant morbidity as observed in our patient. Chronic mucocutaneous candidiasis comprises heterogenous group of diseases which include the sporadic form, familial variant, and endocrinopathy associated type (most common being autoimmune polyendocrinopathy candidiasis -ectodermal dystrophy) and the late onset type.[2] Mutations in the autoimmune regulator gene have been identified as the underlying defect in autoimmune polyendocrinopathy candidiasis -ectodermal dystrophy.[4,5] This could not be further evaluated in our patient due to financial constraints. Although the detailed endocrinology workup ruled out endocrine abnormality at the time of presentation in our case, we have kept her under regular follow-up since candidiasis may precede the endocrinopathy by several years. In the absence of positive family history, it was less likely that our patient suffered from the familial variant.

Specific mutations are identified in autosomal dominant variant of chronic mucocutaneous candidiasis.[6] It is proposed that increased production of inflammatory cytokines such as tumor necrosis factor α and interleukin 6 and 10 and reduced production of interleukines 4 and 5 in response to candida antigens lead to this condition. It is speculated that the affected individuals may be overreacting to candidal antigens with overproduction of inflammatory cytokines which in turn downregulates the protective type 1 response. This could explain the intense inflammation and the persistent disease observed in our patient. Recently, it has been documented that defective production of interleukin 23 leading to impaired function of Th – 17 lymphocytes and reduced production of interleukin-17 plays an important role in chronic mucocutaneous candidiasis.[2,4,5]

The areas affected (scalp, face, and oral cavity) in our patient were consistent with the previous reports of this entity, but we did not come across any previous reports of chronic mucocutaneous candidiasis manifesting with intense photophobia interfering with eye-opening.[1,5] Diagnosis is usually based on clinical picture, microscopy of skin scrapings in potassium hydroxide preparation, fungal culture, and histopathology analysis as performed in our patient.

Long-term treatment with systemic antifungals such as fluconazole, ketoconazole, itraconazole, voriconazole, or

posaconazole or amphotericin B followed by any of the azoles (in severe cases) for prolonged periods repeatedly are the recommended treatments.[7] Resistant cases may benefit from administration of transfer factor.[8]

We report this case to highlight the varying presentations of this rare disease and to stress the need for prolonged treatment and regular follow-up of the affected (to detect any endocrine abnormality as when they arise).

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Nil.

Conflicts of interest

There are no conflicts of interest.

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