

HEAT RELATED DISSEMINATED CANDIDIASIS. CASE REPORT

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Abstract

Candidiasis is an acute or chronic infection of the skin, mucous membranes, rarely internal organs most commonly caused by yeast *C. albicans*. Common types of candidal skin infection include intertrigo, diaper dermatitis, *erosio interdigitalis blastomycetica*, perianal dermatitis, and candidal balanitis. In recent years candidal infection of the skin has increased in prevalence principally because of the increased numbers of patients who are immunocompromised, prolonged antibiotic therapy, exposure to unusually high temperatures. We have a case report of a 49 years old woman hospitalized in neurology department of County Hospital of Oradea for disseminated candidiasis, onset as inguinal intertrigo, disseminated on sun exposed area, normal hospital suite conditions (no air conditioning) in summer time, patient being immobilised due to the neurological complications. Unusually high temperatures during summer seasons past, influences the health of general population, which would not happen under usual circumstances, unless we face the phenomenon of global heating.

Key words: Candidiasis, *Candida Albicans*, yeast, intertrigo, disseminated, global heating.

INTRODUCTION

Cutaneous candidiasis and other forms of candidosis are infections caused by the yeast *Candida albicans* or other *Candida* species (*C. tropicalis*, *C. parapsilosis*, *C. glabrata*, *C. guilliermondii*)⁽¹⁶⁾. *Candida* is a genus of yeasts and the most common cause of fungal infections worldwide. Many species are harmless commensals or endosymbionts of hosts, including humans⁽⁴⁾. *Candida albicans* is the most commonly isolated species; it is a dimorphic fungus that grows both as yeast and filamentous cells and one of the few species of the *Candida* genus that cause the infection candidiasis in humans.^(8,17) *C. albicans* lives in the oral cavity, intestine, rectum, and vagina; it is not part of the normal skin flora except in areas adjacent to body orifices and in the moist intertriginous sites⁽⁶⁾, it isn't present as a commensal in body fluids (except in urine)^(6,9).

Candida infection of the skin and mucous membranes are the result of an interplay between fungal virulence and host defenses. With predisposing factors, genetic conditions, *Candida* transforms from commensal flora, helpful for organism in pathogenic, generating disease; the disease is called candidiasis, an acute or chronic infection of the skin, mucous membranes, and rarely internal organs. *Candida albicans* is responsible for 50–90% of all cases of candidiasis in humans^(11,16).

Predisposing factors are:

Lack of bacterial flora by prolonged antibiotic therapy, in the mouth of neonates, in diabetes, increase glucose in saliva and other tissue fluids. Gram negative bacteria in finger webs may act as co-pathogens enhancing yeast pathogenicity.

Local tissue damage (break in the surface epithelia) e.g. wearing dentures, continuous friction between skin surfaces, chronic macerations and excessive humidity as with wearing nylon tight underwear.

Depression of CMI, e.g. prolonged systemic steroid therapy, immunosuppressive drugs, patients with leukemia, lymphomas, AIDS, or with endocrinal diseases as Cushing's syndrome or Addison's disease or with cases of chronic mucocutaneous candidiasis.

Serum transferring of newborn and that of patients with leukemia is highly saturated with iron and thus has a markedly lower unbound-iron-binding capacity than that of normal adults (more free iron is available for growth and proliferation of *C. albicans*).

Pregnancy and oral contraceptives increase estrogen lead to increase glycogen in vaginal mucosa favouring the growth of *Candida*.⁽²²⁾

Clinical types of *Candida* infection:

- Oral candidiasis: (Oral thrush) is the most common form of candidiasis. It is seen most commonly in new-born during the first weeks of life or in debilitated patients or in AIDS. It is characterized by sharply defined, creamy-white patches (pseudomembrane), on buccal mucosa, tongue and gum. on removal it leaves eroded erythematous base.^(1,18,6)
 - Acute atrophic candidosis (candidal glossitis): seen in elderly and manifested by red, smooth, glistening tongue which is sore upon eating certain food. It is commonly associated with the use of broad spectrum antimicrobial, topical, inhaled and systemic steroids.⁽⁶⁾
 - Chronic atrophic candidiasis: chronic erythema of the mucosa on the hard and soft palate of the denture wearers.
 - Perleche "angular cheilitis or angular stomatitis": fissuring sometimes with crusts at the angles of the mouth.
 - *Candida* leukoplakia: on buccal mucousa or tongue manifested by multiple, white, adherent firm plaques surrounded by an erythematous margin, it doesn't rub-off as the pseudomembraneous form. Smokers are more prone to this form; malignant transformation may occur.⁽¹⁵⁾
 - Black hairy tongue: may develop heavy smokers after prolonged antibiotic therapy.⁽⁶⁾
- Genital candidiasis:
- Vulvovaginal candidiasis (VVC): 2nd most common cause of vaginitis. Symptoms include vulvar pruritus, vaginal discharge, dysuria, and

dyspareunia. Approximately 10% of women experience repeated attacks of VVC without precipitating risk factors.^(11,13,23)

- Candida balanitis: penile pruritus along with white patches on the penis. It is acquired through direct sexual contact with a partner who has VVC.⁽⁷⁾
- Candida intertigo: it occurs in any skin folds especially in obese, e.g. groins, axilla, under breast and toe webs. It is characterized by itchy, moist, and intensely erythematous lesion staring deep in the fold with well-defined fringed borders and subcorneal pustules which rupture leaving tiny erosions. Popular or pustular satellite may be seen outside the lesion.^(6,9,13)
- Interdigital candidiasis “*Erosio-interdigitalis blasto-mycetica*”: commonly occurs between the ring and middle fingers where candida and gram –ve bacteria co-pathogens, it appears as pruritic macerated lesions with scaly borders.⁽¹²⁾
- Perianal candidiasis: usually presents with features of candida intertigo or intense, usually nocturnal itching and burning (pruritus ani).
- Napkincandidosis” Diaper rash”: Diaper area of the new born and infants shows confluent intense erythema with irregular sharp borders. Papular satellite lesions may be seen outside the lesion.⁽²⁾

Congenital cutaneous candidiasis: it is present at birth with affection of the skin and birth membranes due to intrauterine infection.^(5,6)

Systemic candidiasis: it usually occurs in patients with serious illness as leukaemia. In most cases *C. albicans* originates in the patient’s own GIT.

Intravenous infusion is also an important route as in drug addicts.

Clinically: there is a triad of: (1) Fever, (2) Diffuse muscle tenderness, and (3) Erythematous papular or nodular lesions may be with pale center. Candida can be cultured from blood only in 25% of the patients.⁽¹⁴⁾

Chronic mucocutaneous candidiasis (CMC) is a hereditary immunodeficiency disorder characterised by persistent or recurrent infection due to malfunction of the T cells lymphocytes⁽⁵⁾

Chronic paronychia (CP) is an inflammatory disorder of the nail folds of a toe or finger presenting as redness, tenderness, and swelling. Seen commonly in housewives and housemaids.⁽¹⁹⁾

MATERIAL AND METHODS

We present a case of 49-year-old female patient from an urban area who was admitted by emergency to the neurology department of the County

Emergency Hospital in Oradea, for profound left ischemic sylvian attack with right hemiplegia mixed aphasia and elevated blood pressure.

At the time of hospital admission patient presented inguinal intertigo (intensely erythematous lesion starting deep at the fold, maceration, with extension outward with well-defined fringed borders) accompanied by soreness and pruritus. Due to the extension of the lesions to the thigh, buttocks, trunk and abdomen, a dermatological consult was required.

RESULTS AND DISCUSSION:

Dermatological examination revealed disseminated flat, large, itchy, scaly, erythematous plaques on the right thigh, buttocks, right side of the trunk and abdomen that extend outward with satellite pustules seen around the lesion that soon ruptures forming scaly collarets (see Fig. 1, Fig. 2, Fig. 3, Fig.4).



Fig. 1

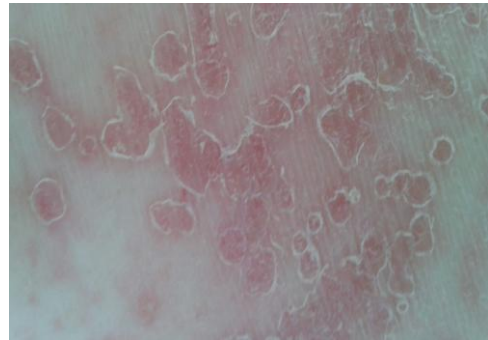


Fig. 2



Fig. 3



Fig. 4

Satellite pustules, nonfollicular ones, that soon ruptured forming scaly collarets, followed up by desquamation means disseminated candidiasis, clinical point of view. We did make KOH preparation and culture from an intact pustule detecting yeasts and pseudo hyphae of *Candida albicans*.

Other laboratory investigations did not show existence of diabetes mellitus, inflammatory syndrome, systemic involvement, any cause of immunosuppression, no sign for pregnancy. It is a medium age patient, well self carried. Having been immobilised due to the neurological complications in normal hospital suite conditions (temperature, humidity, no air conditioning etc.) and exposure to sun coming from a window on the right side, summertime, great heat, the patient developed disseminated cutaneous lesions on her right side of the body.

CONCLUSIONS

This case study highlights how heat can be a factor in the growth of *Candida albicans* infection, dissemination which is seen normally in immunocompromised patients or with predisposing factors (prolonged antibiotic therapy, break in the surface epithelia, prolonged systemic steroid therapy, immunosuppressive drugs, patients with leukemia, lymphomas, AIDS, or with endocrinal diseases as Cushing's syndrome or Addison's disease or with cases of chronic mucocutaneous candidiasis, pregnancy and oral contraceptives). This reported patient was not immunocompromised, with no predisposing factors for disseminated candidiasis, but still developed the disease due to sun induced heat.

Unusually high temperatures during past summer seasons influences the health of general population, which would not happen under usual circumstances, unless we face the phenomenon of global heating. It's another example and a reason why we should take all measures to stop this phenomenon.

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