International Journal of Science and Research (IJSR)
ISSN: 2319-7064
SJIF (2022): 7.942

A Case of Chromoblastomycosis

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Abstract: ***Background: Chromoblastomycosis is a chronic mycosis that affects the skin and subcutaneous tissues and occurs frequently in tropical countries. The clinical picture of chromoblastomycosis often resembles other diseases such as squamous cell carcinoma and verrucous skin tuberculosis so it is often misdiagnosed.There is no standard therapy available for chromoblastomycosis, and little is known regarding the relation between antifungal susceptibility testing and clinical outcome Case: A women, 30 years old, presence of large plaque and verrucous hyperplasia lesions left instep with abnormal activities. The diagnosis of chromoblastomycosis was based on gross and microscopic morphologies, histopathological examination and clinical manifestation. The patient was treated orally with itraconazole (200 mg twice a day). Evaluation after 2 months of treatment has shown improvement. Discussion: Cutaneous and subcutaneous infections of chromoblastomycosis always take place traumatically. The clinical feature of this case is verrucous plaques covered with yellow and thick crusts, which may be misdiagnosed as verrucous skin tuberculosis, squamous cell carcinoma. Sclerotic bodies showed in histopathological examination is the most characteristic of chromoblastomycosis. Currently, there is no accepted treatment guidelines for chromoblastomycosis. In general, the treatment of chromoblastomycosis is difficult, requiring a long duration of continuous systemic antifungal treatment. Itraconazole and terbinafine are the most frequently used antifungal agent for the treatment of chromoblastomycosis, used alone or in combination***

Keywords: chromoblastomycosis, fungi, itraconazole

1. Introduction

Chromoblastomycosis (CMB) is a chronic fungal infection of the skin and subcutaneous tissues caused by pigmented (dematiaceous) fungi that are implanted into the dermis from the environment. In the ensuing inflammation, they form thick-walled single cells or cell clusters (sclerotic or muriform bodies), and these may elicit a marked form of pseudo epitheliomatous hyperplasia, which is often accompanied by transepidermal elimination of organisms.[1]Cromoblastomycosis progresses slowly and by contiguity produces fibrotic changes and lymphatic stasis, leading to lymphedema, which in some cases resembles elephantiasis. Secondary recurrent bacterial infection is another frequently observed complication of CBM. This process exacerbates the commitment of lymphatic vessels .[2]

The main treatments for CMB are itraconazole, 200 mg daily, terbinafine 250 mg daily and in extensive cases, IV amphotericin B (up to 1 mg/kg daily). The responses of these fungi to different antifungal agents do not appear to differ significantly, although there is some evidence that C. carrionii responds more rapidly to terbinafine and itraconazole. In any event, treatment is continued until there is clinical resolution of lesions, which usually takes several months. Extensive lesions often respond poorly to conventional treatment and combinations of antifungal drugs, for example, amphotericin B and flucytosine or itraconazole and terbinafine.[1]

2. Case Report

A 30 year old man came to Dermatology and Venereology outpatient of RSUP Dr. M. Djamil Padang on October 31st 2019 with chief complain is brownish red bumps with rough surfaces which increased in number and size on lower left leg, left instep, left ankle since less than 1 years ago. Initially, about 10 years ago a bump with a rough surface of 1x1 cm appeared on the side of the left leg, then the patient cut the bump using a razor blade. Two months later, a bump with a rough surface reappeared on the excised area before. About ± 5 years, he has treated his complaints to various doctors, traditional medicine, and has been surgery by a surgeon but there is no improvement and the bump reappeared in the surgery area also increased in number and size that it looks like a brownish-red cauliflower and easier to bleed if peeled off. In addition, he also complain that the rough bumps also excreted yellowish discharge with bad smell.. History of working as a farmer in an oil palm plantation on 15 years ago for 7 years. There were history of not using footwear when working in oil palm plantations and there were history of injured on feet while working in a palm oil plantation. There were no history of long coughing, drastic weight, and sweating in night. There is no history of family had similar lesions. 4 On physical examination, Consciousness is compos mentis cooperative with blood pressur 110/90 mmhg, blood pulse 80 x/min, respiratory rate 20 x/min, temperature 37,6oC. Head is normosefali, conjunctiva does not appear anemic, sclera does not icteric, positive pupillary reflexes and isochorism. In the ear, nose, and throat there are no abnormalities. Cardiac and pulmonary examination within normal limits. The liver and spleen are not palpated, bowel sounds are within normal limits, there is no abdominal distension. There is pitting oedem on left foot and no enlargement on lymph nodes. On dermatology examination, location on left lower leg, left instep and left ankle. Distribution is localized with arrangement is unspecified, border is defined, size are nummular until plaque. There are multiple red verrucous plaque with blackish red dot and crust on it in left lower leg and left ankle, brownish red nodules with blackhish red crust on it in left instep, brownish red papules in left instep, brownish verrucous plaque in the left heel (figure 1).

Laboratory examination in first admission revealed hemoglobin was 12,3 g/dL,Leukocyte 8.020 /mm3, Thrombocyte 344.000/mm3 , SGOT : 11 u/l, SGPT 9 u/l, albumin 2,3 g/dL, globulin 2,98 g/dL. Dermoscopy showed multiple irregular blackish red dot (yellow arrow) and yellowish orange avoid structure and Direct light microscopy of skin scraping sample using potassium hydroxide 20 % (KOH) showed sclerotic bodies (figure 2) Histopathological examination on hematoxylin-eosin-stained (HE) and Periodic acid Schiff (PAS) staining revealed hyperkeratosis, parakeratosis and pseudoepitheliomatous hyperplasia in the lining stratified squamous epithelium in epidermis, while in dermis revealed inflammatory infiltrate comprising of neutrophils, lymphocyte, plasma cell, histiocytes and epitheloid (figure 3). Based on the history, clinical features, and laboratoy examination, this case is diagnosed as chromoblastomycosis. The treatment in this case was itraconazol 2x200 mg, Wet dressing PK 1/1000 three times a day each time 15 minutes on ulcers and got improvement after two months.

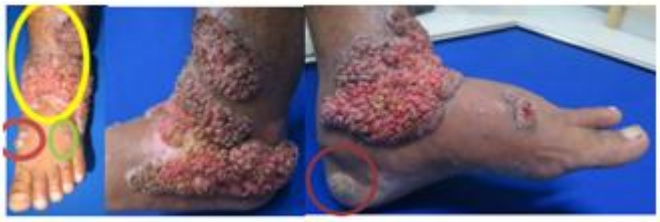

Figure 1: Multiple brownish red verrucous plaque lesion with black dot and blackish reddish crust (yellow circle). Brownish red nodule with blackish red crust (red circle). brownish papule (green circle). Right side, Multiple brownish red verrucous plaque lesion with black dot and blackish reddish crust. Brownish verrucous plaque (red circle)

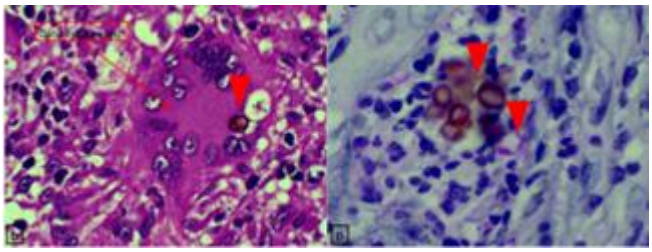

Figure 2: Picture one.Hematoxylin and cosin staining. There was a multiple foreign body type of giant cells that containing copper bodies (red arrow). Picture two, Periodic acid Shift (PAS). There was a cluster of copper peniss.

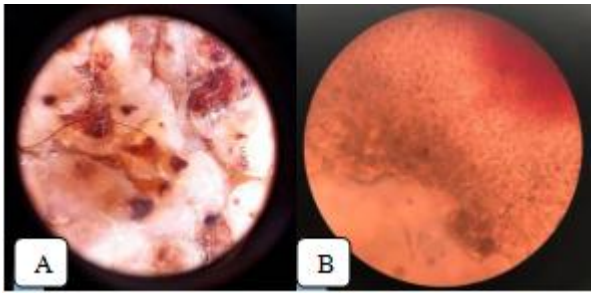

Figure 3: (A) Dermoscopy showed multiple irregular blackish red dot (yellow arrow) and yellowish orange avoid structure (blue circle) B. Direct light microscopy of skin scraping sample using potassium hydroxide 20 % (KOH) showed sclerotic bodies (blue circle).

3. Discussion

The clinical manifestations of chromoblastomycosis are diverse, and six clinical types of lesions are distinguished: nodular, plaque, tumoral, cicatricial, verrucous and with lymphatic dissemination.[3,4] Chromoblastomycosis must be differentiated from other cutaneous fungal infections such as verrucous skin tuberculosis and other skin malignacies. Investigations for CMB include: laboratory blood tests, simple laboratory examinations with direct microscopy, histopathology, and examination of fungal cultures. Culture of causative species on Sabouraud's dextrose agar can be done. An easier and more rapid method of diagnosis is bedside demonstration of sclerotic bodies in KOH examination. Sclerotic bodies are thick-walled single cells or cell clusters seen as brown-colored "copper pennies.[5,6] A definitive diagnosis can be made by histopathological examination. Histopathological features are characterized by the presence of pseudoepithelimatous epidermal hyperplasia; epithelioid cells, histiocytes found in the dermis layer. Other cell infiltrates such as large nucleated cells; a number of lymphocyte cells, plasma cells, eosinophil cells and neutrophil cell groups. Tuberculoid structure can be found, but no caseose necrosis is found. The shape is oval, thick-walled, blackish-brown with a size of 6-12 µm, known as copper pennies, sclerotic bodies, muriform cells or Medlar bodies that can be found singly or in groups.[6]

In our patient we can found, erythematous plaques, irregular, sharp and elevated edges with black dots. This case was given a differential diagnosis with verrucous cutaneous tuberculosis because the clinical picture that appeared was hyperkeratotic lesions with a broad, irregular verukous surface. In this case,we did examination using KOH 20 % and the result was the presence of a sclerotic body. Histopathological examination found in the underlying connective tissue stroma appear as solid lymphocytes, plasma cells, histiocytes, epitheloid. There are a number of walls and micro focus abscesses and copper pennis. From history, clinical symptoms and several examinations so that this case is definitely diagnosed as chromoblastomycosis.

There are several treatment options that can be used for chromoblastomycosis, namely itraconazole 100-400 mg / day used for prolonged periods, usually for 8-12 months or even longer. In addition, there are choices of terbinafin 250 mg daily, fluconazole 200-600 mg / day, thiabendazole 25 mg / day divided into 3 doses, ketoconazole 200-400 mg / day, saperconazole, and in extensive lesions can be used intravenously amphotericin B (up to 1 mg / kg daily). [5]

The antifungals that have shown the greatest efficacy are itraconazole (200-400mg/day) and terbinafine (500-1000mg/day) for at least 6-12 months, preferably at higher doses if tolerated. Both drugs showed high in vitro activity against the causative agents of CBM. Pulse therapy with itraconazole was reported (400mg/ day for 7 days/month) and proved more economical and effective and associated with better treatment adherence.[7] Liya He et al reported, A 57-year-old, healthy male famer. Physical examination

revealed large verrucous plaques covering left arm and hand. The boundaries of these plaques were clear, and these plaques were covered with yellow and thick crusts, without pus and exudates. The patient was diagnosed with chromoblastomycosis and started oral therapy with 250 mg/day terbinafine tablets (Novartis Pharmaceutical Co., Ltd., China) and 200 mg/day itraconazole capsules (Xian Janssen Pharmaceutical Ltd., China) which was associated with topical hot compress (45-50 ℃, 3 times/day, 1 hour for each time). After 30 days, it was showed marked clinical improvement.[8] Ching-Sheng Yang et al, reported 30 cases chromoblastomycosis in Taiwan. In the remaining three cases, the patients were cured using systemic agents. In two cases, patients underwent monotherapy of itraconazole (200 mg/d) for 4 months (case 20) and 12 months (case 21). The final case had a large verrucous plaque over the left cheek (case 28), which was cured with itraconazole (200 mg/d) for 4 months with an adjuvant topical agent.[9]Lasut. M, et al reported a case of chromoblastomycosis in 37 year old women that are treated using itraconazole 2x200 mg. After the second month of treatment clinical improvement began to appear.[4] In our case firstly the excision biopsy was being performed and after the confirmation of the diagnosis on histopathology ,Patient was started on anti-fungal therapy. Patient got itrakonazol 2x200 mg which is planned for 8-12 month. After 2 months, the treatment show improvement.

4. Conclusion

The treatment of CBM is quite challenging. According to previous reports, many modalities, including antifungal immunomodulatory therapy, physical methods, photodynamic therapy, and surgical excision, have been used for the treatment of CBM. Itraconazole is the most common choice of first-line agents.

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