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A STUDY ON CHROMOBLASTOMYCOSIS IN A TERTIARY CARE HOSPITAL (DMCH), LAHERIASARAI, BIHAR

Microbiology

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ABSTRACT

Background: Chromoblastomycosis, a chronic subcutaneous mycosis, is caused by several dematiaceous Fungi, the most common being Fonsecaea pedrosoi. A majority of cases from India have been reported from the sub-Himalayan belt and South India.
Aim: The aim was to study chromoblastomycosis in around Darbhanga reason of Bihar including demographic and clinicomycological profile.
Materials and Methods: This report is a retrospective hospital record-based analysis of all cases of chromoblastomycosis who presented to the dermatology outpatient department of our tertiary care hospital during the past 3 years.
Results : A total of 11 cases of chromoblastomycosis were diagnosed during the above period. The disease was seen predominantly in middle-aged male. The lower extremity (72.7%) was more commonly affected. Verrucous and nodular lesions are the common clinical presentation. Sclerotic bodies are demonstrated in potassium hydroxide mount and histopathological section in 81.8% and 90.9% cases, respectively. The causative fungus was isolated in 90.9% and cass with F. pedrosoi, as the most common species.

KEYWORDS

Chromoblastomycosis, Fonsecaea pedrosoi, Sclerotic bodies

INTRODUCTION

Chromoblastomycosis is an uncommon chronic localized fungal infection of the skin and subcutaneous tissue presenting with slow progressive verrucous lesion. The infection is caused by dematiaceous (pigmented) Fungi which produce sclerotic or muriform bodies within the tissue. The most common causative agents are *Fonsecaea pedrosoi, Phialophora verrucosa, Fonsecaea compacta,* and *Cladosporium carrionii.* The disease is commonly seen in the rural workers working in the tropical and subtropical climates. In India, such cases have been reported from the sub-Himalayan belt and the coastal areas due to hot humid climates in these areas.

MATERIAL AND METHODS

This study included a retrospective hospital record-based analysis of 11 cases of chromoblastomycosis who presented to the dermatology outpatient department of our tertiary care hospital (Darbhanga Medical College, Laheriasarai, Bihar), study was done at Microbiology Department of DMC, Laheriasarai, Bihar during a period of 3 years from January 2018 to December 2020. A detailed history including demographic data, occupation, and history of trauma was recorded. Detailed clinical examination was performed to note the pattern of presentation. Microscopic examination of scraping from the lesions and black dots over the surface of the skin was performed using 20% potassium hydroxide (KOH). A separate skin swab was collected aseptically for fungal culture using Sabouraud dextrose agar and culture for *Mycobacterium* species. Biopsy was undertaken from the lesion and subjected to histopathological examination in the department of pathology DMC, Laheriasarai, Bihar.

RESULTS

A total of 11 cases of chromoblastomycosis were diagnosed during the period of 3 years.

The majority of the patients were male with a male-to-female ratio of 1.4:1. The ages ranged from 21 to 65 years. Most of the patients belonged to the age group of 21–35 years (5, 45.4%) followed by the age group of 36–60 years (3, 27.2%).

Out of the 11 cases, five were farmers, three were homemakers, two were laborers, and one was student by occupation. Majority (8), i.e., 72.7% of them do not give a history of injury. Only three of them recalled a history of trauma, i.e., penetrating injury in one case and abrasions in two cases.

The site of affection was lower extremity in the majority of cases (8.72%). The lesion was limited mostly to the legs in six cases and affected the heel in two cases (Figure 1). There was involvements of the arm in three cases (27.2%) (Figure 2, Table 1). The clinical presentation was verrucous or nodular lesion in eight cases and plaques of varying sizes in three cases. Scraping from he lesions and black dots gave a positive result for sclerotic bodies in nine (81.8%) cases KOH mount as shown in (Figure 3). All the cases were histopathogically proven with demonstrable characteristic brown thick-walled sclerotic bodies either with or outside the giant cells in ten (90.9%) cases (Figure 4).

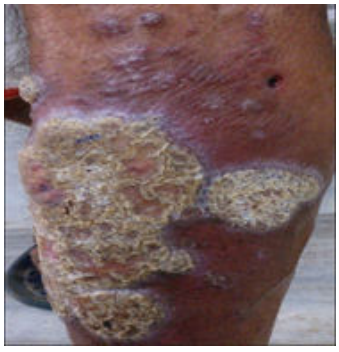

Figure 1: Verrucous and nodular lesions on lateral surface of the left leg

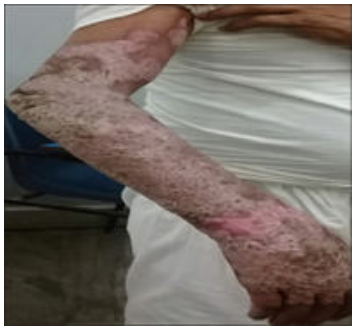

Figure 2: Verrucous Lesion On The Right Arm With Surface Scaling

Figure 3: Microphotograph showing brown sclerotic bodies on potassium hydroxide mount

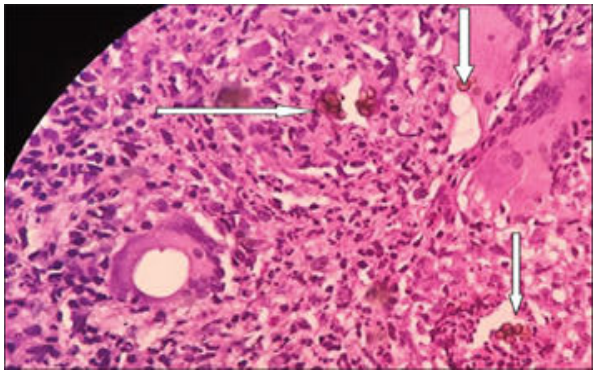

Figure 4: Mixed mycotic granuloma with sclerotic bodies (arrows) on H and E stain

Table : 1 – Cases Of Chromoblastomyocosis In DMCH, Laheriasarai, Bihar

Sl No.	Age/ sex	Occupation	Clinical presentation	Site	Sclerotic bodies in KOH mount	Culture	Histopathology
1	28/M	Farmer	Verrucous plaque	Left Leg	Positive	F. pedrosoi	Mixed mycotic granuloma with sclerotic bodies
2	33/M	Farmer	Nodular	Right leg	Positive	F. pedrosoi	Mixed mycotic granuloma with sclerotic bodies
3	35/M	Labour	Verrucous plaque	Left arm	Negative	C. carrionii	Epithelioid granuloma with sclerotic bodies
4	45/F	Home maker	Verrucous plaque with scaling	Right heel	Positive	F. pedrosoi	Pseudoepitheliomatous hyperplasia with sclerotic bodies
5	20/M	Student	Verrucous plaque	Right arm	Positive	P. verrucosa	Mixed mycotic granuloma with sclerotic bodies
6	42/M	Farmer	Verrucous plaque	Left leg	Positive	F. pedrosoi	Mixed mycotic granuloma with sclerotic bodies
7	32/F	Labour	Nodular	Left heel	Negative	Negative	Mixed mycotic granuloma with sclerotic bodies
8	50/M	Farmer	Verrucous plaque	Right leg	Positive	F. pedrosoi	Epithelioid granuloma with sclerotic bodies
9	35/F	Home maker	Nodular	Left arm	Positive	C. carrionii	Mixed mycotic granuloma with sclerotic bodies
10	64/M	Farmer	Verrucous plaque	Left leg	Positive	F. pedrosoi	Pseudoepitheliomatous hyperplasia with sclerotic bodies
11	55/F	Home maker	Verrucous plaque	Right leg	Positive	C. carrionii	Mixed mycotic granuloma with sclerotic bodies

Isolation of the causative fungus was possible in ten (90.9%) cases. The most common species was *F. pedrosoi.* The other species identified were *C. carrionii* and *P. verrucosa.*

The patients were treated with a combination of antifungal itraconazole (200–400 mg once daily) and terbinafine (500 mg once daily) in the cases for 3–6 months with periodic monitoring of liver function tests. All the cases responded to the above regimen expect in one case where intravenous amphotericin B was given.

DISCUSSION

Chromoblastomycosis is a chronic localized infection of the skin and subcutaneous tissue caused by a group of dematiaceous or black Fungi. The causative agent lives in soil, woods, and plant debris. Chromoblastomycosis was originally reported from Brazil. In India, Thomas *et al*. first reported two cases of chromoblastomycosis from Assam. Since then, there have been several case reports from sub-Himalayan belt, western and eastern coasts.

We studied the clinicomycological features of chromoblastomycosis in our tertiary care hospital. The infection usually occurs in the age group of 20–40 years with a male preponderance. In our case series, the infection was found mostly in the age group of 21–35 years (45.4%) with a male-to-female ratio of 1.4:1. Rural males from an agricultural background were commonly affected which is the common pattern of the disease worldwide. In our study, out of the 11 cases, 5 were farmers. Reports from India, Sri Lanka, Nepal and also from Central and south America show common involvement of the lower extremity as was the case with our study. This may be due to frequent trauma to the lower legs during agricultural work. Chromoblastomycosis rarely involves the face but a few cases have also been reported.

Carrion described five morphological types of chromoblastomycosis consisting of nodular lesion, timorous verrucous lesion, plaques and cicatricial lesion. The common clinical presentation in our study was verrucous and nodular lesions. The clinical diagnosis was accurate in ten cases. In one case, there was a coexisting squamous cell carcinoma with chromoblastomycosis. As the lesions are polymorphic, they must be differentiated from verrucous vulgaris, dermal Leishmaniasis, mycetoma, squamous cell carcinoma and sporotrichosis.

The diagnosis of chromoblastomycosis should be confirmed by direct microscopy of the scraping from the lesions in 20% KOH when thick-walled dark brown tissue form of the fungus (sclerotic/copper penny bodies) is seen, histopathological examination of a biopsy specimen with quanulomatous reaction and sclerotic bodies, or by culture of scraping or biopsy material.

In our series, sclerotic bodies were seen in nine cases in KOH mount and in ten cases, causative fungus was isolated by culture. Histopathologically, all the cases were proven with one or other features of chromoblastomycosis with the presence of sclerotic bodies. Although histopathological study is more appropriate for the diagnosis of chromoblastomycosi. KOH mount and culture method are simple, convenient and noninvasive tests for the diagnosis of subcutaneous mycosis.

The treatment for chromoblastomycosis is cryosurgery for small lesions, itraconazole for larger ones and in some cases, a combination of both. All our patients were treated either with itraconazole alone or itraconazole and terbinafine comination and responder well.

CONCLUSION

Chromoblastomycosis evolves slowly and affects the quality of life. Therefore, a high index of suspicion and prompt laboratory diagnosis will help in the initiation of therapy at an early stage to prevent the complications.

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