



Original Research Article

Retrospective Analysis of Patients with Cutaneous Sporotrichosis: Unusual Cause of Non-Healing Ulcers

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Abstract

Background: *Sporotrichosis (most reported subcutaneous mycosis) is caused by sporothrix schenckii species complex, a common saprophyte of soil, decaying wood, hay, and sphagnum moss caused by agent's inoculation on the skin or mucous membrane by trauma with contaminated soil and plant material.*

Aim and Objective: *To study the clinico-epidemiological profile and unusual presentations in an area of high endemicity.*

Material and Methods: *Retrospective analysis of 96 consecutive, diagnosed patients of sporotrichosis attending the Dermatology outpatient clinic between July 2015 to May 2018 was done. Clinical details regarding age, gender, occupation, onset, duration and progression of lesion, sites involved, history of trauma and various clinical patterns were recorded.*

Results: *Of the 96 patients, 36(37.5%) were males and 60(62.5%) females (ratio 1:1.6). Seventy two (75%) patients were between the age group of 20-79 years with majority that is 56 (58.3%) between 20-59 years, these being the most active years of life. History of trauma was reported by 44% patients however 56% denied any such history. Clinically, 63 patients were of FCS and 33 were of LCS. Histopathology was consistent with sporotrichosis in 42% patients, was suggestive of granuloma in 8%, deep fungal infections in 3%, results were awaited in 2% and not consistent in 45% patients.*

Conclusion: *This study ascertains the clinico-epidemiological profile in the area as it was conducted in the endemic area of sporotrichosis and various unusual presentations were noted. The non-healing ulcer although is a rare presentation but the diagnosis could not be overlooked and the clinical suspicion is the key to diagnosis. Timely initiation of an effective treatment is imperative to prevent chronicity and morbidity. Culture remains gold standard; however, histology provides support to the diagnosis.*

Introduction

Sporotrichosis (most reported subcutaneous mycosis) is caused by *sporothrix schenckii* species

complex, a common saprophyte of soil, decaying wood, hay, and sphagnum moss. For a long time, sporotrichosis was known as the "rosebush

mycosis”, or the “gardener’s mycosis”, given that the infection usually resulted from the agent’s inoculation on the skin or mucous membrane, by trauma with contaminated soil and plant material. It is particularly common in tropical/subtropical areas and temperate zones, but large outbreaks have occurred in other parts as well. No age, gender, or race is spared. The preponderance of males in most reported cases is attributed to their higher exposure risk than gender susceptibility. Incubation period ranges from a few days to a few months, the average being 3 weeks. The skin and the surrounding lymphatics are involved primarily leading to development of a small, indurated, progressively enlarging papulo-nodule at the inoculation site that may ulcerate (sporotrichotic chancre) without causing systemic symptoms. Main clinical types of cutaneous sporotrichosis are: 1) Lymphocutaneous (LCS) 2) Fixed Cutaneous (FCS) 3) Multifocal or Disseminated Cutaneous Sporotrichosis, and 4) Extracutaneous or Systemic Sporotrichosis which occur from hematogenous spread, lymph node, or pulmonary disease. Lymphocutaneous sporotrichosis is the most common (70–80%) presentation where a noduloulcerative lesion (sporotrichotic chancre) is formed at inoculation site and a string of similar nodules along the proximal lymphatics, with or without transient satellite adenopathy.¹ Fixed cutaneous sporotrichosis occurs less commonly and is characterized by localized lesions at the inoculation site. The lesions are asymptomatic, erythematous, papules, papulopustules, nodules, or verrucous plaques and occasionally nonhealing ulcers or small abscesses. Multifocal or disseminated cutaneous sporotrichosis rarely described variety, means ≥ 3 lesions involving 2 different anatomical sites implies cutaneous dissemination following multiple traumatic implantations of the fungus or rarely from hematogenous spread in individuals apparently having no predisposing factors for immunosuppression.² Extracutaneous disseminated sporotrichosis can present as sinusitis, osteoarticular, pulmonary, ocular or

central nervous system disease and occurs in the setting of immunosuppression.³ This varied disease spectrum has been attributed to factors such as mode of inoculation, size and depth of the inoculums and host immunity. Various other rare presentations are non-healing ulcers, noduloulcerative, furuncles, small abscesses, cellulitis, herpetiform ulcer, verrucous plaque, prurigo nodularis-like, keratoacanthoma and melanoma or scc-like.⁴ Clinical suspicion is the key for early diagnosis and has to be differentiated from cutaneous tuberculosis, cutaneous leishmaniasis, nocardiosis, chromoblastomycosis, blastomycosis, paracoccidioidomycosis, and atypical mycobacteriosis. Histopathology is nonspecific and mimics other granulomatous diseases such as deep fungal infections, cutaneous tuberculosis, leprosy, sarcoidosis, and foreign body granulomas.⁵ *S. schenckii* exhibits temperature dimorphism; it exists as a mold at room temperature (26°C) and as yeast in the host tissues (37°C).⁶ It can be grown from skin biopsy or other clinical samples on Sabouraud’s dextrose agar (SDA), brain heart infusion agar at 37°C, or Mycosel at 25°C and the growth is visible in 3–5 days to 2 weeks. Other methods for identification of causative fungus are microscopy & temperature dimorphism, biochemical tests, and molecular tests. Various treatment options include Saturated Solution of Potassium Iodide (SSKI), Azoles (itraconazole and fluconazole), Allylamines (terbinafine), Polyenes (amphotericin B), Flucytosine, newer antifungals (posaconazole or ravuconazole), thermotherapy, and surgical excision.

Aim and Objective

To study the clinico-epidemiological profile and unusual presentations in an area of high endemicity.

Material and Methods

Retrospective analysis of 96 consecutive, diagnosed patients of sporotrichosis attending the Dermatology, Venereology & Leprosy outpatient

clinic of Dr. R. P. Govt. Medical College, Kangra (Tanda), Himachal Pradesh between July 2015 to May 2018 was done. Clinical details regarding age, gender, occupation, onset, duration and progression of lesion, sites involved, history of trauma and various clinical patterns were recorded.

Results

Retrospective analysis of 96 consecutive patients of sporotrichosis was done. Of these, 36 (37.5%)

were males and 60(62.5%) females (ratio 1:1.6). Seventy two (75%) patients were between the age group of 20-79 years with majority that is 56 (58.3%) between 20-59 years, these being the most active years of life (fig 1). Females were mostly housewives others were in various professions such as 13 were students, 12 agriculturists, 10 were businessman and others (fig 2).

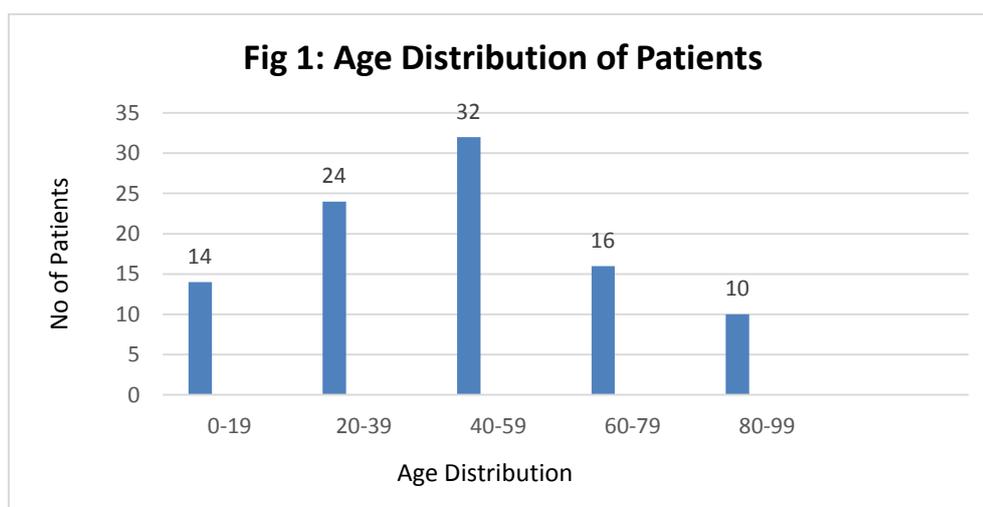
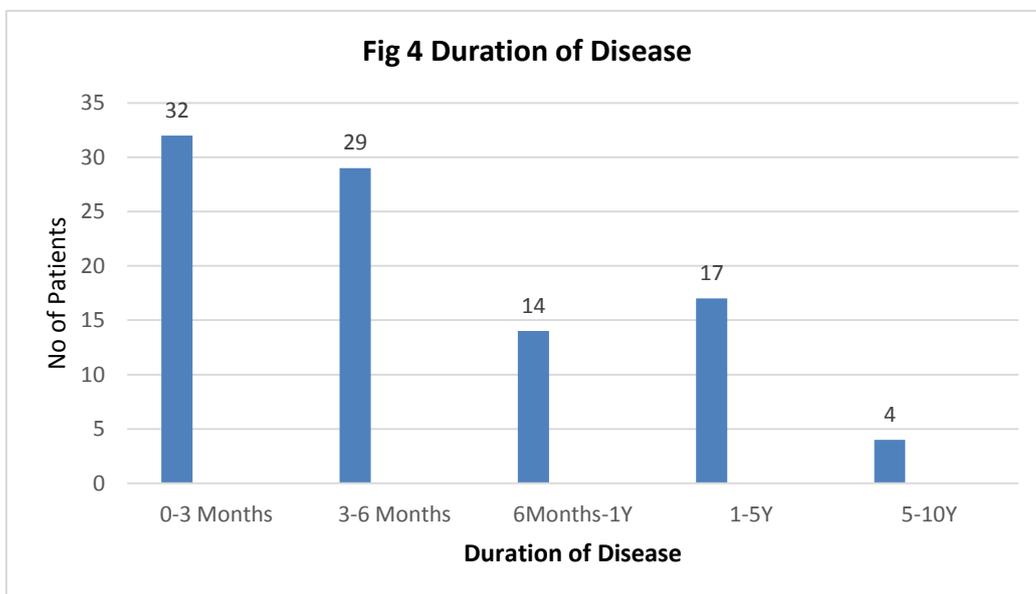
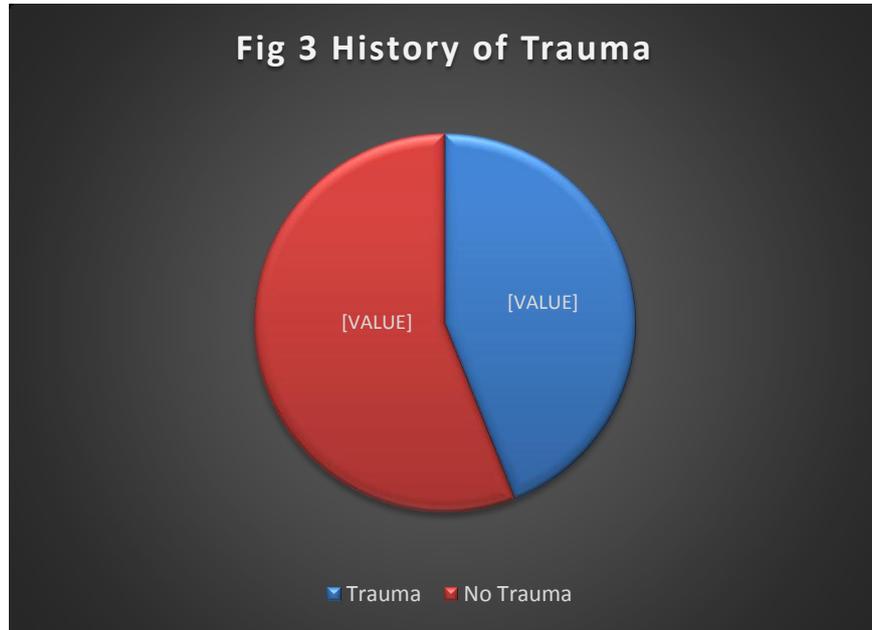


Fig 2: Occupation and Spare Time Activity

Housewives	48
Students	13
Agriculturists	12
Business	10
Office workers	7
Others	
Labourer	2
Preschool child	1
Not recorded	1

History of trauma was given by 44% patients however 56% denied any such history (fig 3). The duration of disease ranged from 1 month to 10

years with maximum, 61(63.5%) patients with duration between 0-6 months (fig 4).



Clinically, 63 patients were of FCS and 33 were of LCS (fig 5) (plate 1-3). The lesions were most commonly distributed over upper limbs followed

by lower limbs in both FCS and LCS. The other sites involved were face, breast, chest etc (fig 6).

Fig 5: Clinical Presentations

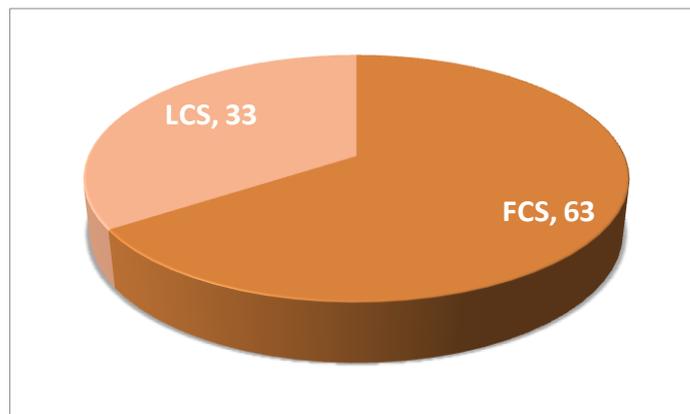




Plate 1: Fixed Cutaneous Sporotrichosis A) Pretreatment B) Post Treatment

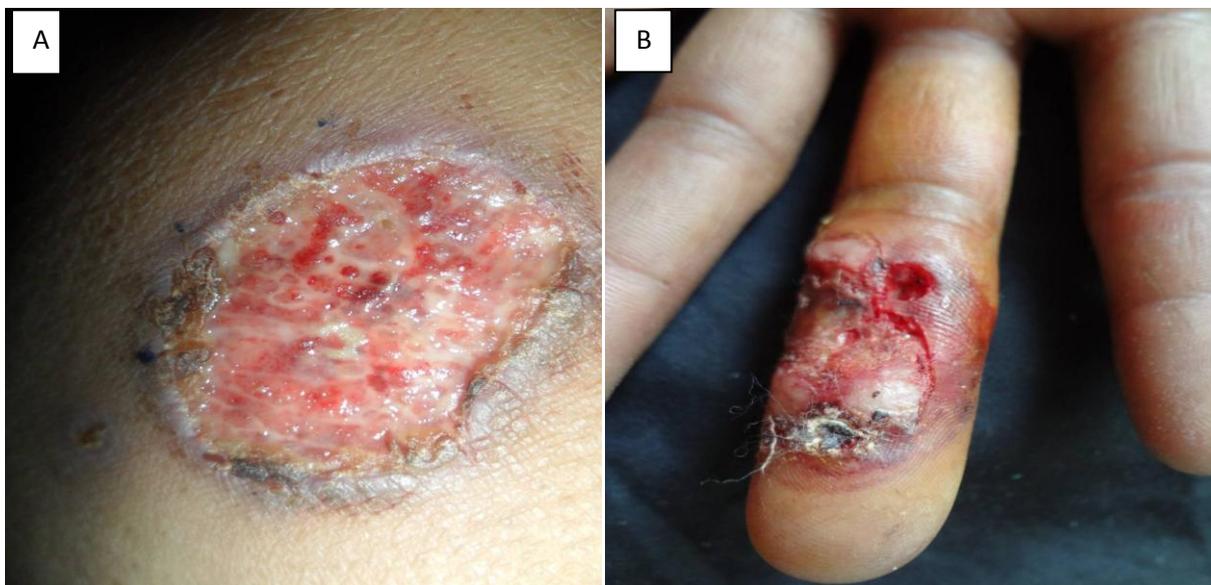


Plate 2: Ulcerative Presentation of Sporotrichosis



Plate 3: Lymphocutaneous Sporotrichosis A) Pretreatment B) Post Treatment

Fig 6: Types of Lesions and their Distribution

Site	Fixed cutaneous	Lymphocutaneous
Face	14	-
Ear	1	-
Upper limb	25	23
Lower limb	17	7
Chest	1	1
Breast	3	-
Abdomen	-	1
Buttock	1	1
Scrotum	1	-

Of the 96 patients, histopathology was consistent with sporotrichosis in 42% patients, was suggestive of granuloma 8%, deep fungal infections in 3%, results were awaited in 2% and not consistent in 45% patients (fig 7, 8). Spores on histopathology could be seen in 27(28%) patients. Sporothrix schenckii species could be cultured in 35(36%) patients on Sabouraud's glucose agar (SDA) at 25°C.

Fig 7: Patients on the basis of Histopathology

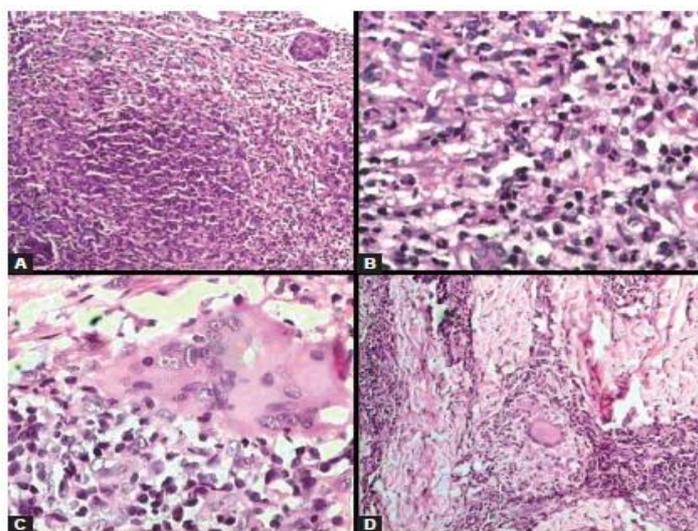
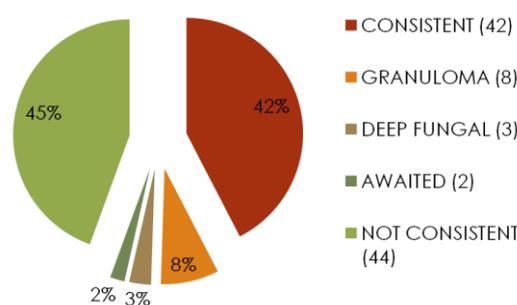


Fig 8: (A) Neutrophilic abscesses in the dermis, lymphoplasmacytic, epitheloid cell
 (B) Acute on chronic inflammation with characteristic zones;
 (C) Chronic inflammatory cell infiltrate with foreign body giant cell reaction;
 (D) Epitheloid cell granuloma with a Langhans' giant cell (H & E, × 40)

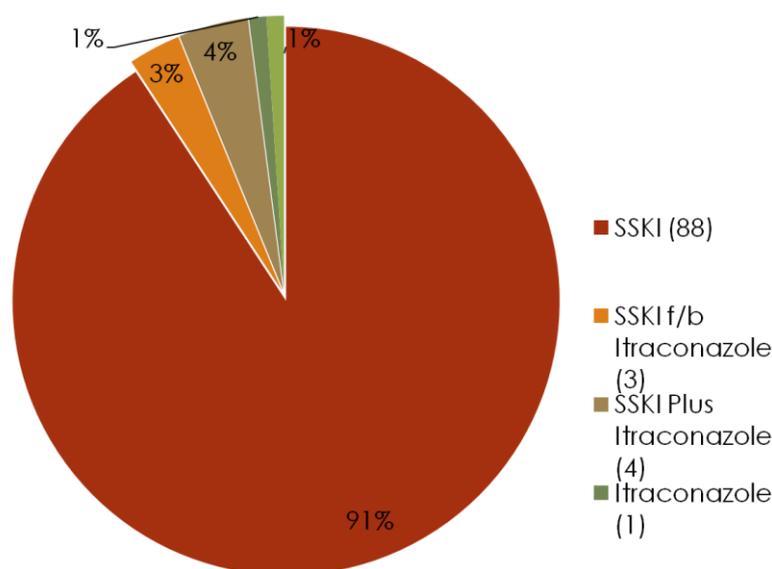
Among all the newly diagnosed patients of sporotrichosis, 88(91%) were treated with SSKI,

4(4%) were treated with SSKI plus oral itraconazole, 3 (3%) with SSKI followed by oral

itraconazole, and only 1 with oral itraconazole. All the patients were followed every 4 weeks for response to treatment and side effect profile of the

drugs administered until the clinical remission (fig 9).

Fig 9: Treatment Regimens



Discussion

Sporotrichosis primarily involves the skin and surrounding lymphatics following traumatic inoculation of *S. schenckii*. The first case of sporotrichosis in India was reported by Ghosh in 1932.⁷ Histopathology is usually non specific and rarely diagnostic as demonstration of cigar-shaped, oval to round or single budding forms of the yeast although diagnostic but is rarely seen due to their scanty presence.⁶ In our study, there was female predominance as there were 36 males and 60 females (1:1.6) which is similar to results of Verma et al⁸ but in contrast to Civila et al⁹ who documented male predominance. Majority, 56(57.4%) patients were between age group of 20-59 years these being the most active years of life similar to Verma et al⁸ where disease was predominantly seen in the fourth to sixth decade of life with 58% cases between 31 and 60 years of age. Clinically in our study, 63 patients were of FCS and 33 were of LCS however, Mahajan et al⁵ documented lymphocutaneous and fixed cutaneous as the most common varieties and seen in 49% and 43% respectively whereas Verma et al⁸ noted LCS as the more common form with 71

cases and 28 cases of FCS. The lesions were most commonly distributed over upper limb followed by lower limb in both FCS and LCS which is in accordance with the literature reviewed. Culture positivity in the second week after inoculation and incubation at 25°C was observed in 36% of the patients diagnosed as sporotrichosis which is far less compared to observations by Verma et al⁸ but in concordance to Mahajan et al.⁵ Of the 96 patients, histopathology was consistent with sporotrichosis in 42% patients, was suggestive of granuloma in 8%, deep fungal infection in 3%, was not consistent in 45% and reports were awaited of 2% however, Mahajan et al⁵ found chronic non-specific inflammation without granuloma formation in 46% skin biopsy specimens, 29% showed acute or chronic inflammation and tuberculoid granuloma formation was seen in 25%. All the patients showed good response to various treatment regimens.

Conclusion

To conclude, this study ascertains the clinico-epidemiological profile in the area as it was

conducted in the endemic area of sporotrichosis and various unusual presentations were noted. The non-healing ulcer although is a rare presentation but the diagnosis could not be overlooked and the clinical suspicion is the key to diagnosis. Timely initiation of an effective treatment is imperative to prevent chronicity and morbidity. Culture remains gold standard; however, histology provides support to the diagnosis.

Conflict of Interest: None declared.

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