Journal of Pakistan Association of Dermatologists. 2024;**34(4)**:1070-1074.

Case Report

Sarcoidosis mimicking sporotrichosis: An unusual presentation

Vipra Kohli[1], Ranchit Narang[1], Himani Bhushan[1], Sharang Gupta[2], Shreya Malhan[2]

[1] Department of Dermatology, Maharishi Markandeshwar University, Solan, Himachal Pradesh, India.
[2] Department of Dermatology, Government Medical College, Patiala, Punjab, India.

Abstract Sarcoidosis is a granulomatous disease of unknown etiology that can mimic a number of cutaneous and systemic disorders. It is a diagnosis of exclusion and high index of suspicion is required in cases presenting with atypical features. Here we report a case of a 51-year-old female farmer suffering from sarcoidosis who presented with lesions resembling sporotrichosis clinically.

Key words
Sarcoidosis; Sporotrichosis; Mimicking.

Introduction

Sarcoidosis, a multi-systemic inflammatory granulomatous disease of undetermined origin is distinguished by infiltrative non-caseating granulomas, epitheloid cells and lymphocytic alveolitis.[1] Dimorphic fungus Sporothrix schenckii spawns sporotrichosis, a deep fungi-related infection classically culminating from the traumatic inoculation of infested soil and organic debris into skin. To tell apart these, it becomes a problematic task when the culture comes negative, as the symptoms are juxtaposing. Sarcoidosis is a diagnosis of exclusion which can present with a variety of manifestations. We report a case of a middle aged female presenting with history and clinical lesions compatible with a diagnosis of sporotrichosis who was found to be suffering from sarcoidosis on extensive work up.

Manuscript: Received on: September 24, 2023
Revision on: November 26, 2023
Accepted on: January 13, 2024
Address for correspondence
Dr. Sharang Gupta
Department of Dermatology,
Government Medical College,
Patiala (147001), Punajb, India.
Email: drsharanggupta97@gmail.com

Case report

A 51-year-old patient had history of thorn prick over medial aspect of left lower leg while working in field followed by development of single, erythematous, non-scaly, non-pruritic raised lesion equivalent to a size of a coin. There was no history of associated oozing or pain. In the next two months, lesion increased two-fold in size for which she took ayurvedic treatment (undocumented). The patient did not get any relief. After that the lesion neither increased nor decreased in size but was associated with mild itching. She also complained of bilateral knee and back pain associated with morning stiffness for 7 months. There was no history of cough, chest pain, dysphagia, myalgia, fever, anorexia, loss of weight, redness or watering from eyes, nausea, vomiting, abdominal pain or decreased urination. The patient was non-alcoholic and a non-smoker with no history of drug addiction. Family history was insignificant and there was no history of any chronic medical illness.

Local examination revealed single, round, ill-defined, erythematous plaque with hyper-pigmented border, round to oval in shape

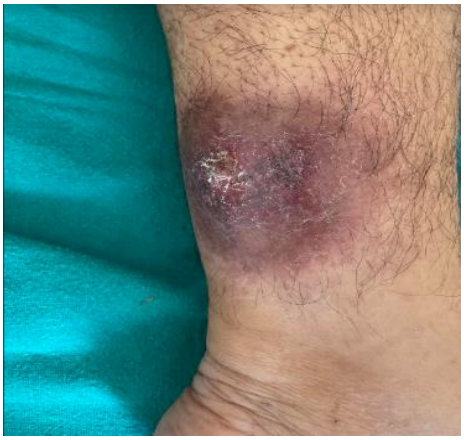

Figure 1 Single, round, ill-defined, erythematous plaque with hyper-pigmented border, round to oval in shape measuring 3x4 cm associated with fine scales, crust and erosions.

measuring 3x4 cm associated with fine scales, crust and erosions **(Figure 1)**.

On palpation induration was present with normal temperature whereas lesional tenderness was absent. Diascopy was negative and dermoscopy showed linear and branching vessel over translucent yellowish orange globular structures with scar-like depigmented areas **(Figure 2)**.

Histopathology results of the incisional biopsy performed was suggestive of keratinized stratified squamous epithelium revealing thinned off epidermis, spongiosis and focal vacuolar degeneration of the basal layer. Dermis including subcutaneous tissue showed numerous, non-caseating naked epitheloid cells granulomas with langhans type of giant cells. In addition, few granulomas showed lymphocytic cuffing. On special staining reticulin rich granulomas were appreciable **(Figure 3)**.

On respiratory examination crepitus was present on the right side while vesicular sounds were heard on the left. Erythrocyte sedimentation rate (ESR) values were 30 mm/hr. with normal being 0-20 mm/hr. in women and serum Angiotensin converting enzyme (ACE) levels were 62 microgram/L with normal being less than 40 microgram/L. Routine biochemistry including

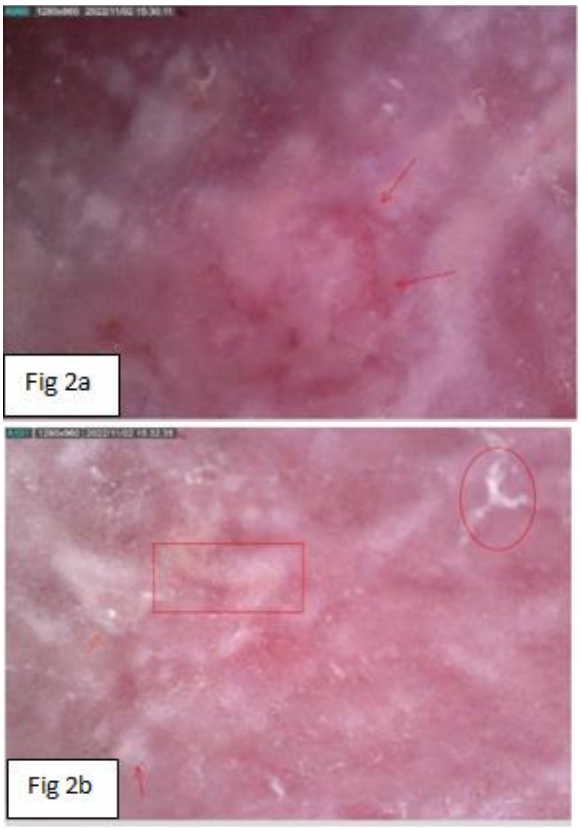

Figure 2 Dermoscopy revealing linear and branching vessel over translucent yellowish orange globular structures (2a) with scar-like depigmented areas (2b) (Dino-Lite Edge, polarized mode, 220x).

fasting blood sugar, renal function tests and hepatic function tests were normal. The patient tested negative for HIV, Hepatitis B and Hepatitis C viral markers. Chest X-ray and contrast enhanced computed tomography of chest revealed multiple enlarged homogenously enhancing lymph node in pre-carinal, sub-carinal, pre-tracheal, para-tracheal, aorto-pulmonary window and bilateral hilar lymphadenopathy with the largest of size 15x13mm at right hilum **(Figure 4)**.

Radiograph of Lumbo-sacral spine and knees suggested Grade I osteoarthritis.

The patient was labeled as a case of Sarcoidosis and was started on tapering doses of oral glucocorticoids along with 15mg of weekly methotrexate which led to the resolution of the lesions.

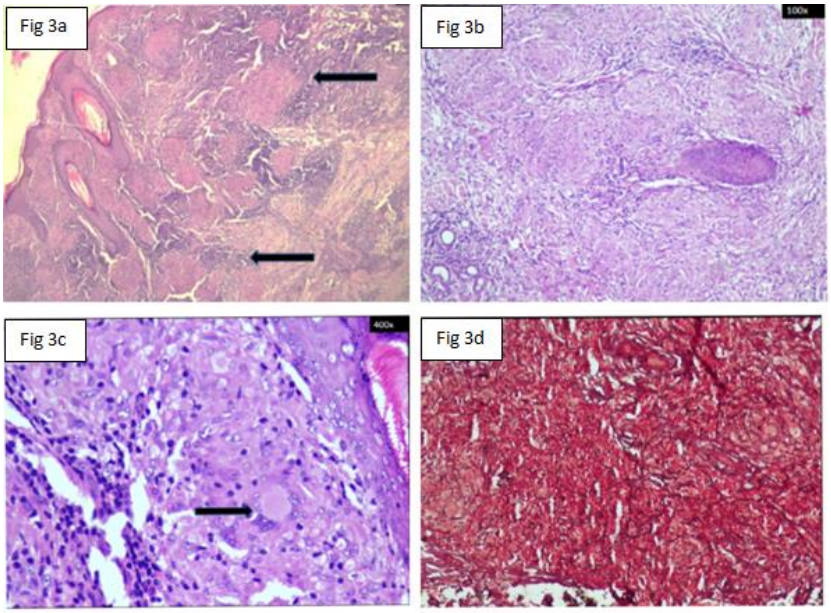

Figure 3 Histopathological examination on hematoxylin and eosin staining showed keratinized stratified squamous epithelium revealing thinned off epidermis, spongiosis and focal vacuolar degeneration of the basal layer. Dermis including subcutaneous tissue showed numerous, non-caseating naked epitheloid cells granulomas (black arrow) (3a, 40x) with langhans type of giant cells (3b,100x and 3c,400x). In addition, few granulomas showed lymphocytic cuffing. On special staining reticulin rich granulomas were appreciable (3d).

Discussion

Sarcoidosis, a great masquerader is always a diagnosis of exclusion. It is a multi-organ sickness of unidentified foundation usually affecting the lower respiratory tract recuperated by Broncho-alveolar lavage (BAL) and intra-thoracic lymph nodes.[2] It is habitually insidious in onset, discovered by radiographic scans or presaged by constitutional signs which may evident as a medical emergency.[3] The symptoms can momentously fluctuate upon the organ convoluted. There may be complaints of persistent dry cough, fatigue, swollen and painful joints, shortness of breath, and enlarged lymph glands on the chest and tender reddish patches on the skin. The radiographs could possibly divulge bilateral hilar lymphadenopathy, which may retrogress entirely devoid of parenchymal involvement, or may be tracked by diffuse pulmonary mottling. This in turn may go either way, upslide or downslide to irreversible fibrosis. Each system demonstrates a peculiar inclination for a specific kind of skin lesion. Lupus pernio often encompasses the eyes and the bones, however plaques and maculo-papular eruptions are more recurrently concomitant with lymphadenopathy and splenomegaly.[4]

Sporotrichosis, stirred up by a typical saprophyte of soil, decaying wood, hay or sphagnum moss is a chronic granulomatous mycotic infection. Following the incubation of which tends to impact the skin and subcutaneous tissue, gradually growing papulo-nodule that may ulcerate (fixed cutaneous sporotrichiosis) or numerous nodules that arise proximally along lymphatics (lymphocutaneous sporotrichiosis). Immuno-compromised individuals are more likely to experience disseminated sporotrichiosis or involvement of several visceral organs. Precise diagnosis is based on clinical statistics, culture, and biopsy identification of suppurative and granulomatous inflammation with fungal elements. Sporothrix schenckii, a dimorphic fungus previously described as a single species, spawns this disease. Based on phylogenetic studies using DNA sequencing, the species is now known as Sporothrix schenckii complex, which includes three phylogenetic sibling species, Sporothrix brasiliensis, Sporothrix globosa, and Sporothrix luriei, in addition to Sporothrix schenckii sensu stricto.[5]

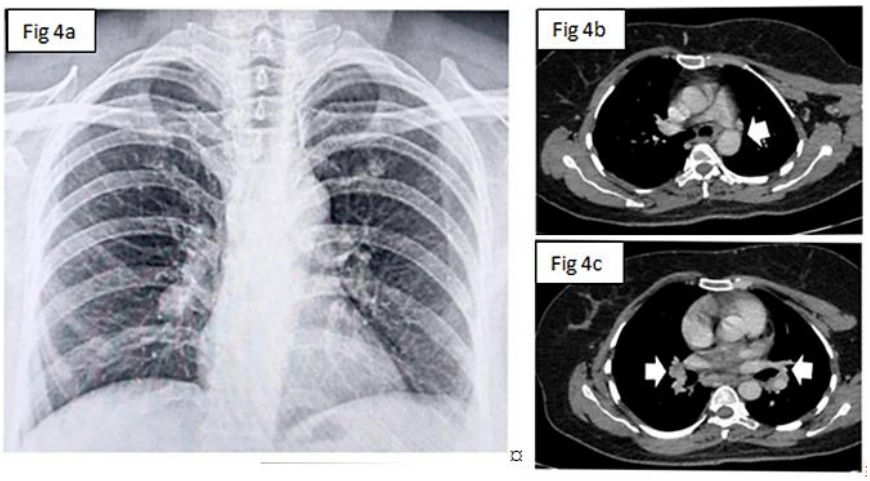

Figure 4 Chest X-ray (4a) and contrast enhanced computed tomography (4b and 4c) of chest revealed multiple enlarged homogenously enhancing lymph node in pre-carinal, sub-carinal, pre-tracheal, para-tracheal, aorto-pulmonary window and bilateral hilar lymphadenopathywith the largest of size 15x13mm at right hilum.

Sarcoidosis typically mimics sporotrichiosis and pyoderma gangrenosum clinically and histologically, making diagnosis difficult and challenging when the organism is not detected in the biopsy culture. A strong clinical suspicion and characteristic histopathology is essential for curating the diagnosis.

In the present case, the patient was exposed to soil because she used to harvest grains in the farm. The patient initially presented with a short history following thorn prick on medial aspect of left lower leg, the lesion on clinical inspection looked like sporotrichiosis. The other provisional diagnoses were listed out to be foreign body granuolma, cutaneous leishmaniasis and sarcoidosis. The results of the CBNAAT, fungal culture, sputum for AFB, and mantoux test were all negative, ruling out fixed cutaneous sporotrichiosis and lupus vulgaris. Histopathological examinations revealed naked granulomas surrounded by slipper shaped cells and there was inflammation up till mid dermis devoid of any neutrophils.

The most distinctive histopathological feature of cutaneous sarcoidosis is the presence of naked, reticulin-rich granulomas. Dermoscopy bared numerous forking and linear vessels over crystal clear orange-yellow globular structures. There were also scar-like depigmented zones. On special staining, ZN stain for AFB was negative, Giemsa stain was also negative with no LD bodies on the field and PAS also didn't show any fungal hyphae/spores. Chest X-ray revealed pre-canal, sub-carinal, pre-tracheal, aorto-pulmonary and bilateral lymphadenopathy all revealed enlarged homogenously enhancing lymph nodes, with the largest measuring 15X13mm at the right hilum. The CECT chest findings showed bilateral hilar lymphadenopathy biochemical findings revealed raised ESR (6.2 mg/dl) and ACE (6.2 mg/dl) levels. A diagnosis of sarcoidosis was made taking into consideration the clinical, dermoscopic, biochemical, histopathological and radiological findings.

Conclusion

Both sarcoidosis and sporotrichosis are great cutaneous and systemic masqueraders. The present case highlights the need for a high index of suspicion in suspected cases of sarcoidosis as well as sporotrichosis, especially with atypical presentations. Diagnosis should be made keeping in mind the clinical, biochemical, histopathological as well as radiological findings. Dermoscopy can serve as a great screening tool to narrow down the differentials.

Declaration of patient consent The authors certify that they have obtained all appropriate patient consent.

Financial support and sponsorship None.

Conflict of interest Authors declared no conflict of interest.

Author's contribution

VK, HM: Identification of the case & Management of the case, manuscript writing, have given final approval of the version to be published.

RN, SG: Diagnosis and management of the case, critical review, have given final approval of the version to be published.

References

1. Newman LS, Rose CS, Maier LA. Sarcoidosis. *N Engl J Med*. 1997;**336(17)**:1224-34.
2. Samtsov AV. Cutaneous sarcoidosis. *Int J Dermatol*.1992;**31**:385-91.
3. Braverman IM. Sarcoidosis.In: FeedbergIM, Eisen AZ, Wolff K, Austen KF, Goldsmith LA, Katz SI, editors. Fitzpatrick's Dermatology in General Medicine. 6th Ed. Mc Graw Hill: New York; 2003. p. 1777-83.
4. Mana J, MarcovalJ, GraellsJ, Salazar A, PeyriJ, Pujol R. Cutaneous involvement insarcoidosis: Relationship to systemic disease. *Arch Dermatol*. 1997;**133**:882-8.
5. English JC, Patel PJ, Greer KE. Sarcoidosis. *J Am Acad Dermatol.* 2001;**44**:725-43.
6. Odom RB, James WD, Berger TG, editors. Andrews' Diseases of the skin. 9th ed. WB Saunders Co: Philadelphia; 2000. P. 896-910.