Lepromatous leprosy with an atypical psoriasiform presentation mimicking psoriasis: a case report

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Leprosy, just like syphilis, has become a great imitator with its various atypical and unusual presentations. It presents in many diverse ways and can be confused with many infectious and non-infectious forms.It is often misdiagnosed as common disorders like psoriasis, pyoderma, angioedema, pre-vitiligo, sarcoidosis, and granuloma annulare. Appropriate history-taking with good clinical examination is required to diagnose atypical presentations of leprosy. Early diagnosis along with appropriate treatment is essential to prevent disability and other complications. We outline a case of lepromatous leprosy with an atypical psoriasiform presentation that mimicked psoriasis. Psoriasiform leprosy presents as erythematous plaques of varying sizes and shapes on the extensor regions of trauma-prone sites like the knees, elbows, and buttocks. This condition mimics psoriasis and is diagnosed as leprosy based on the slit skin smear and histopathology with a special Fite-Faraco stain.

Keywords: leprosy, psoriasis, psoriasiform, imitator

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INTRODUCTION

Leprosy or Hansen's disease (HD) has a wide spectrum of manifestations ranging from asymmetrically localized macules and plaques to nodular, indurated, generalized symmetric cutaneous involvement [1]. The clinical presentation of leprosy is highly variable, and in all its stages it can imitate other dermatological conditions like psoriasis, sarcoidosis, granuloma annulare, etc. Hence, early diagnosis along with appropriate treatment is essential to prevent disability and other complications.

CASE PRESENTATION

A 68-year-old, non-hypertensive, non-diabetic male presented with multiple dark-colored raised lesions over bilateral soles since nine months and multiple reddish raised lesions all over the body since one month. A history of mild itching was present over these lesions. The patient was being treated as a case of chronic plaque psoriasis by private practitioners. He achieved minimal relief with topical corticosteroids and emollients. He denied a history of winter exacerbation, fever, sore throat, joint pain, oral or genital ulcers, burning micturition, or epistaxis. Cutaneous examination revealed multiple discrete well-defined erythematous plaques over the upper limbs, back, and lower limbs with toenail dystrophy (Figure 1). There were hyperkeratotic hyperpigmented verrucous plaques over the soles (Figure 2). The Auspitz sign was negative. The rest of the cutaneous examination was normal. Sensory examination over the plaques was normal. Glove and stocking sensation was present. On nerve examination, bilateral ulnar nerves and common peroneal nerves were palpable

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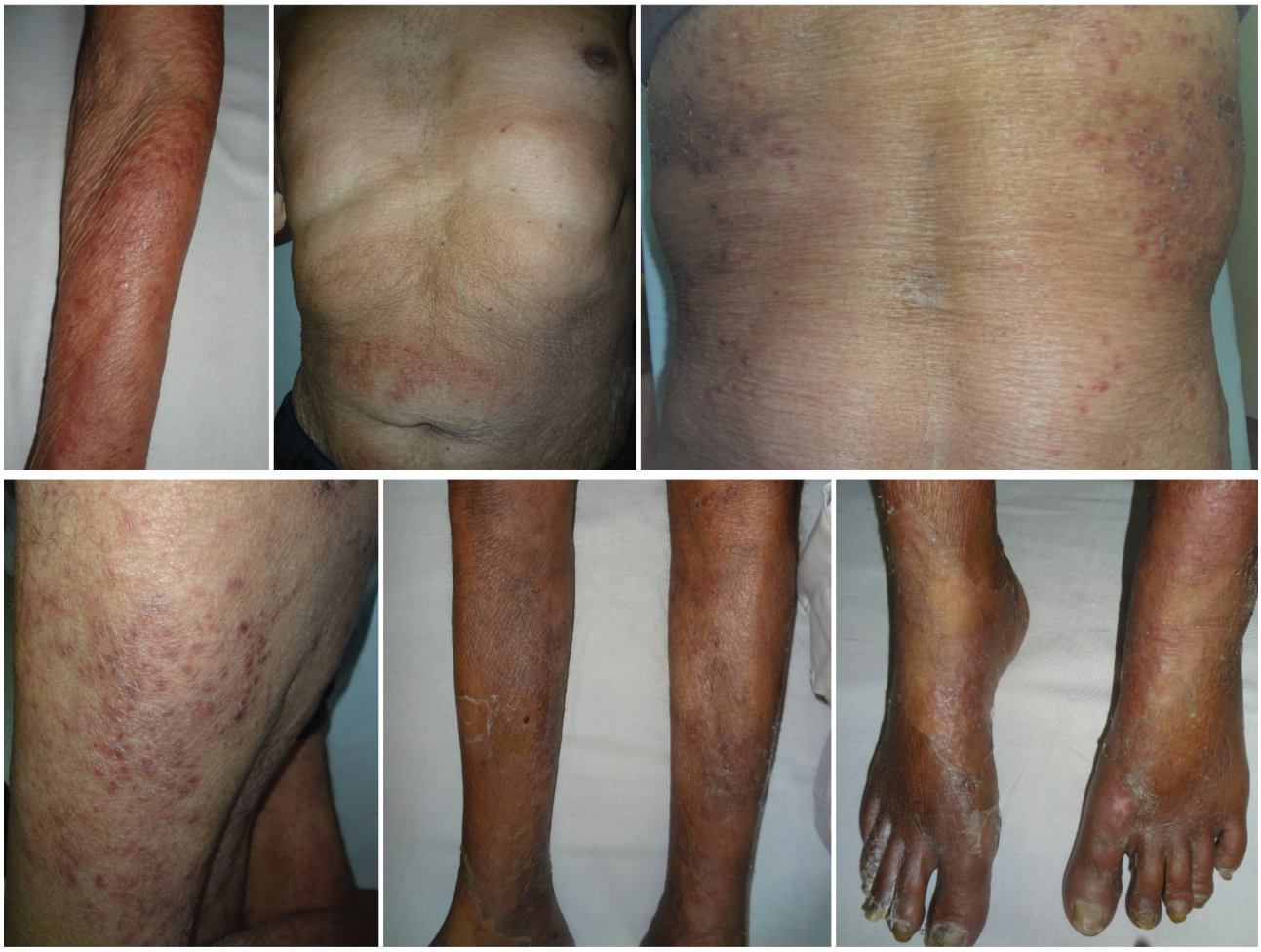

Figure 1. Multiple discrete well-defined erythematous plaques over the back, upper limbs, and lower limbs, along with toenail dystrophy.

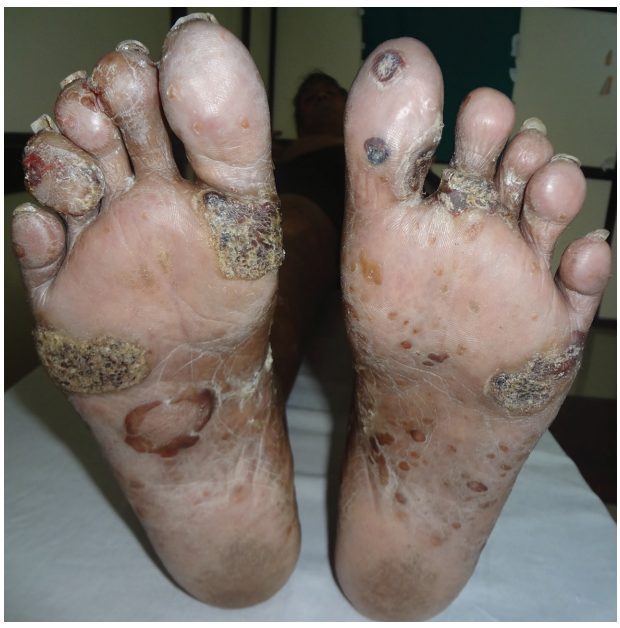

Figure 2. Multiple hyperkeratotic hyperpigmented verrucous plaques over the soles.

and non-tender. The general examination was normal.

Based on history and clinical examination, differential diagnoses of chronic plaque psoriasis, reactive arthritis, and cutaneous T-cell lymphoma were considered. All hematological workups including complete blood count, blood sugar levels, liver function test, kidney function test, urine analysis and microscopy, erythrocyte sedimentation rate, and peripheral smear were within normal limits. Ultrasonography of the abdomen revealed no abnormality. Histopathology from a papule over the right leg revealed an unremarkable epidermis and a collection of heavily parasitized macrophages within the dermis suggestive of lepromatous leprosy with a positive Fite-Faraco (FF) stain (Figure 3). Histopathology from a verrucous plaque over the right sole revealed thick keratinous layer with a collection of foamy macrophages in the dermis and strongly positive FF stain (Figure 4). Based on

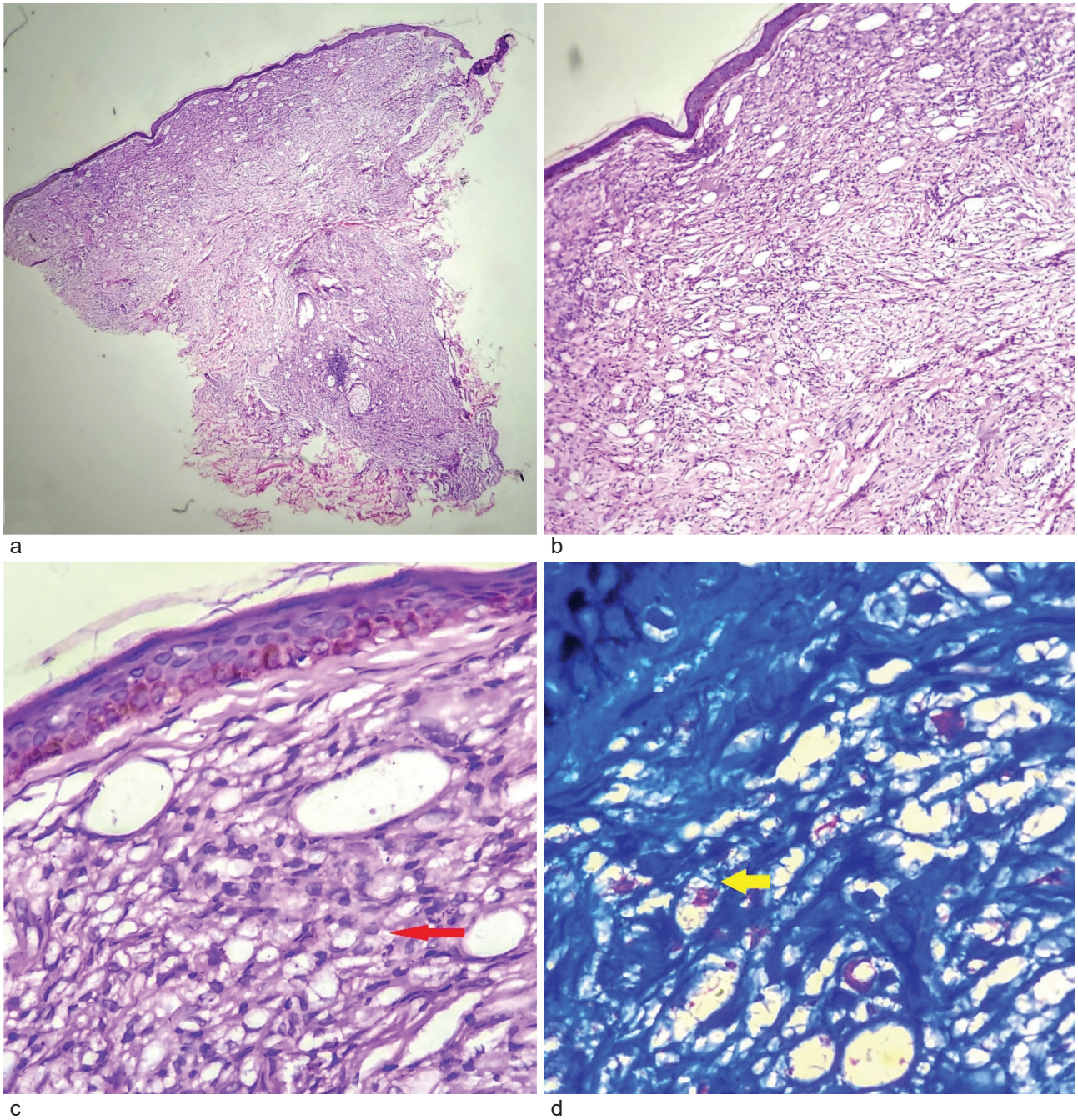

Figure 3. (a) Scanner view showing diffuse infiltrate in reticular dermis (H&E,4×); (b) Lower magnification showing a normal epidermis with foamy macrophages (H&E,10×); (c) Foamy macrophages in the papillary dermis (red arrow) (H&E,40×); (d) Positive Fite-Faraco stain (yellow arrow).

the histopathology report, a slit skin smear (SSS) was performed from the left eyebrow, left earlobe, right hand, and left leg, returning positive with a bacteriological index (BI) of 2+ and a morphological index (MI) of 20. Based on all the above findings, a diagnosis of lepromatous leprosy with psoriasiform lesions was reached. The patient was started on multibacillary multidrug therapy (MDT) including rifampicin 600 mg once a month, dapsone 100 mg once daily, and clofazimine 300 mg once a month and 50 mg once daily. He was lost to follow up.

Ethical considerations

The authors certify that they have obtained all

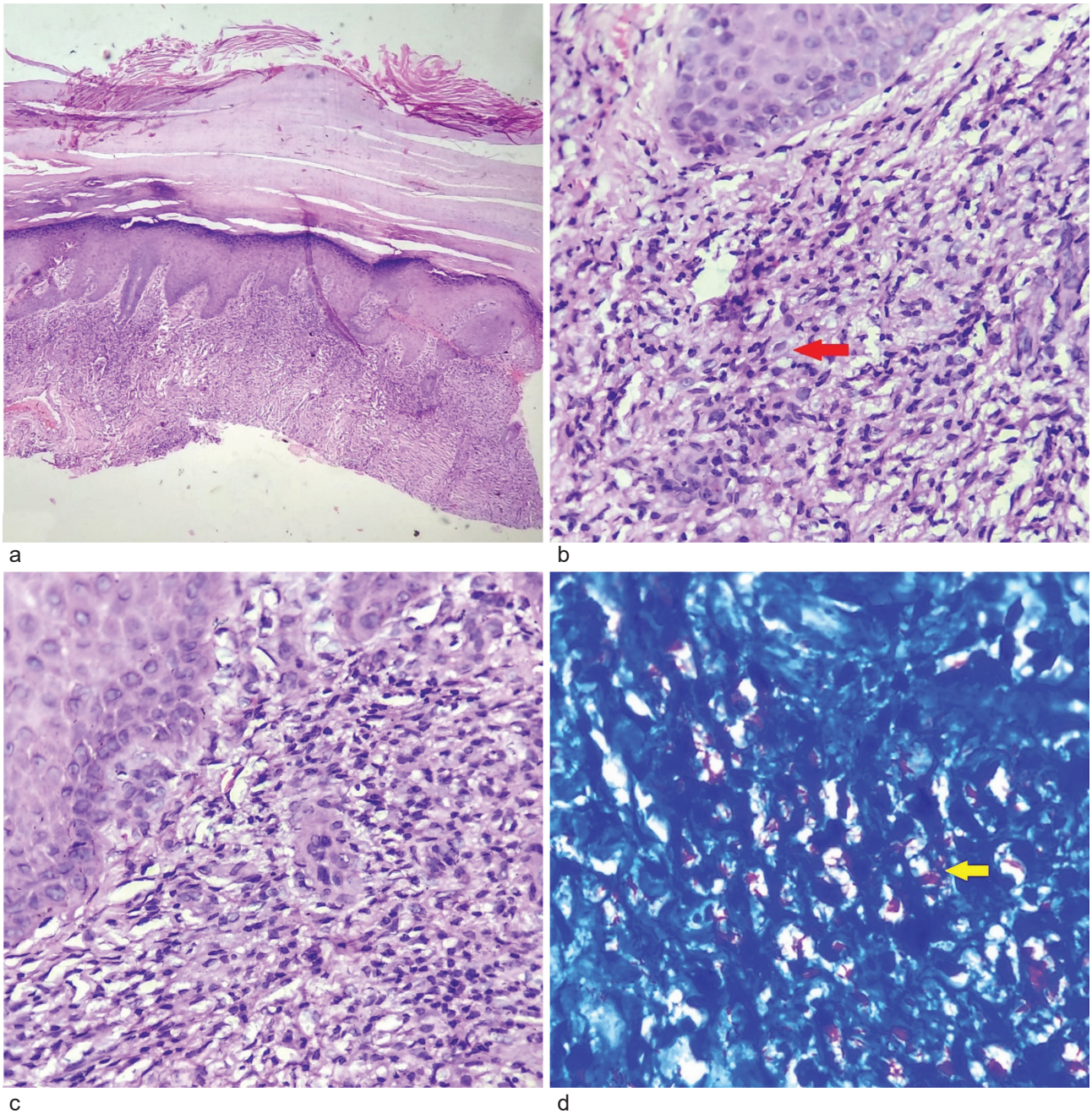

Figure 4. (a) Thickened keratinous layer with a diffuse infiltrate in the dermis (H&E,10×); (b, c) Collection of foamy macrophages in the dermis (H&E,40×) (red arrow); (d) Positive Fite-Faraco stain (yellow arrow).

appropriate patient consent forms. In the form, the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. Patient consent form was uploaded during manuscript submission.

DISCUSSION

Leprosy or HD has a wide range array of clinical presentations that can imitate various other dermatoses like psoriasis, dermatitis, sarcoidosis, leishmaniasis, and lupus vulgaris. In the past, psoriasis was believed to be a form of leprosy, with the term "lepra" being used to refer to this condition in ancient times [2].

Out of the varied clinical presentations, one of the presentations is similar to the lesions in chronic plaque psoriasis, where erythematous plaques with clearly defined borders are seen accompanied by thick silvery scales [3,4]. Psoriasiform lesions in

leprosy present as erythematous plaques of varying sizes and shapes on the extensor areas of trauma-prone sites like the knees, elbows, and buttocks, as seen in our case [5]. Leprosy is usually a clinical diagnosis, but psoriasiform lesions in leprosy should be distinguished from psoriasis vulgaris based on slit skin smear and histopathology. The previously reported cases of psoriasiform lesions in leprosy were by Vora *et al.* in lepromatous leprosy, Vora *et al.* in borderline lepromatous leprosy, Gunawan *et al.* in borderline lepromatous leprosy and Chetan *et al.* in mid-borderline leprosy with blaschkoid psoriasiform lesions [4-7].

Leprosy commonly manifests in those parts of the body with a relatively lower temperature. Hence, the hyperkeratotic hyperpigmented verrucous plaques over soles in this case were an unusual presentation. Pavithran *et al.* and Rajendran *et al.* reported the involvement of the palms and soles [8,9]. Indira *et al.* described palmoplantar involvement in 10% of the cases of 280 studied patients, most of whom had the erythematous plaque type [10]. Arora *et al.* found macular-type lesions over the palms and soles in only 3.6% of cases of tuberculoid, borderline tuberculoid, and mid-borderline types of leprosy [11]. Agrawal *et al.* reported nodular lesions of palms and soles in lepromatous leprosy [3]. Baslas *et al.* reported palmar involvement in histoid leprosy [12]. The reason for the lack of affecting the palms and soles is vague but two hypotheses have been made. Firstly, the relatively thicker epidermis over the palms and soles causes comparative warmth and is also a mechanical barrier. Secondly, the ampleness of fibro-fatty tissue on the palms and soles provides proper insulation with a high nerve-bed temperature [13]. In our case, the lesions over the soles were verrucous plaques with mild fissures, resembling palmoplantar keratoderma. Lesions over other parts of the body impersonated psoriasis. No other findings were in favor of psoriasis apart from the clinical presentation.

Abundant bacilli in lepromatous leprosy with BI of 5+ or 6+ are not demonstrated in tuberculoid leprosy, and intermediate counts can be seen in borderline patients [14]. The BI in the SSS starts falling after one year of MDT approximately as 0.6-1.0 log yearly and continues to fall even after the treatment has been stopped [14]. This is the basis for fixed-duration MDT [14]. Over 99.9% of live bacilli get killed after one dose of rifampicin, so changes in the morphological index (MI) are quick, with the value falling to 0 within five weeks after starting treatment [14]. The reason that the BI in our case was 2+ could be due to previous treatment taken by the patient or inadequate smears taken or laboratory error.

CONCLUSION

Appropriate history-taking and thorough examination with strong doubt are required to diagnose unusual presentations of leprosy. An increasing number of cases with atypical presentation leads to diagnostic dilemmas. Despite the elimination of leprosy, in an endemic country like India, we still need to keep an open eye to recognize the various faces of leprosy, thereby facilitating early treatment and prevention of disabilities and transmission. We presented this case on account of its rare presentation.

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Authors' contributions

Bhagyashree Supekar - Manuscript concept, writing and review.

Vrutika Shah - Manuscript writing and editing.

Jayesh Mukhi - Manuscript review.

R P Singh -Manuscript review.

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