Table 1: Clinical data and ultrasonographic findings of our cases

Case	Gender	Age (yrs)	Location	Size (mm)	Sonographic features					Clinical differential diagnosis
					Location	Echogenicity	Homogeneity	Focal hypoechoic area	Posterior acoustic shadow	
1	Female	60	Back	14.8×5.8×6.5	Dermis to subcutis	Isoechoic	Heterogeneous	Present	Present	NLCS, NF
2	Female	51	Right thigh	8.1×4.2×4.0	Dermis to subcutis	Isoechoic	Heterogeneous	Present	Present	NLCS, NF
3	Female	69	Right thigh	9.2×5.0×4.3	Dermis to subcutis	Isoechoic	Heterogeneous	Present	Present	NLCS, NF
4	Female	60	Left thigh	8.0×5.0×4.6	Dermis to subcutis	Hyperechoic	Heterogeneous	Present	Present	NLCS, NF

NF: Neurofibroma, NLCS: Nevus lipomatosus cutaneous superficialis

Neurofibroma is mostly a homogenous hypoechoic lesion without posterior acoustic shadow, whereas this nevus is a heterogeneous isoechoic lesion with posterior acoustic shadow.[3] Neuroma and dermatofibroma are hypoechoic lesions in the dermis.[4,5]

In conclusion, we demonstrated the sonographic features of nevus lipomatosus cutaneus superficialis and analysed the sonographic and histopathologic correlation. Sonography is a noninvasive and real-time diagnostic tool, valuable in assisting the diagnosis of nevus lipomatosus cutaneus superficialis.

Declaration of patient consent

Patient consent is not required as the patient's identity is not disclosed or compromised.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest

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References

1. Dhamija A, Meherda A, D'Souza P, Meena RS. Nevus lipomatosus cutaneous superficialis: An unusual presentation. Indian Dermatol Online J 2012;3:196–8.
2. Kang BS, Shim HS, Kim JH, Kim YM, Bang M, Lim S, *et al*. Angioleiomyoma of the extremities: Findings on ultrasonography and magnetic resonance imaging. J Med Ultrasound 2019;38:1201–8.
3. Ryu JA, Lee SH, Cha EY, Kim TY, Kim SM, Shin MJ. Sonographic differentiation between schwannomas and neurofibromas in the musculoskeletal system. J Ultrasound Med 2015;34:2253–60.
4. Bhatt KD, Tambe SA, Jerajani HR, Dhurat RS. Utility of high-frequency ultrasonography in the diagnosis of benign and malignant skin tumors. Indian J Dermatol Venereol Leprol 2017;83:162–82.
5. Zarchi K, Kromann CB, Wortsman X, Jemec GB. Usefulness of ultrasound for the diagnosis of dermatofibroma. Med Ultrason 2016;18:132–3.

Masson-Fontana stain: A silver lining for diagnosis of primary syphilitic chancre

Sir,

Syphilis is a sexually transmitted infection caused by the spirochaete, *Treponema pallidum* subsp. *Pallidum.* Its first stage, primary syphilis, is a local infection due to spirochaete replication at the site of inoculation, after contact with an infected person.

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Figure 1: Single hard chancre at the coronal sulcus

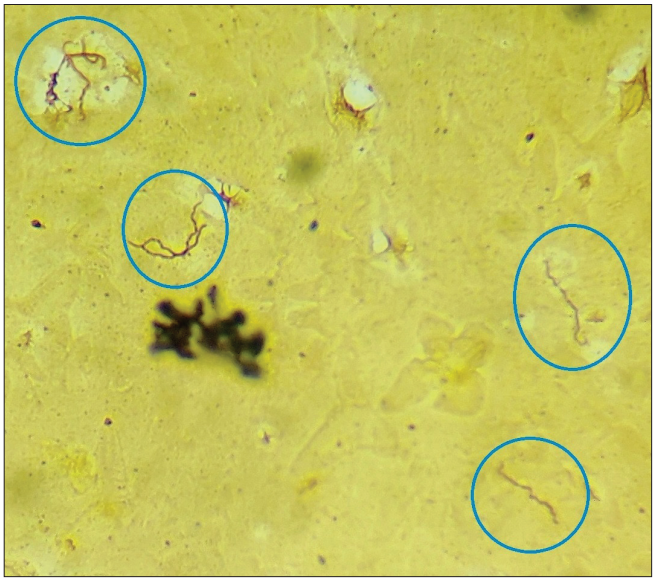

Figure 2: Smear from ulcer base showing multiple slender spiral spirochaete (in blue circles) (Masson-Fontana silver stain 1000× magnification)

Treponema pallidum is a motile, slow-growing fastidious bacterium of the order *Spirochaetales* and humans are their only natural host. It is a slender spiral bacterium measuring around 10–15 microns in length and 0.10–0.15 microns in width, and thus, difficult to visualize on direct microscopy.[1] We successfully demonstrated spirochaetes by light microscopic examination from Masson-Fontana silver-stained smear from a suspected syphilitic chancre.

A 30-year-old unmarried male presented with a single painless penile ulcer of one-week duration. He reported sexual contact with three different partners, with the last unprotected exposure occurring two months back. Examination revealed a single indurated ulcer sized 2×1 cm at the coronal sulcus [Figure 1] with two discrete non-tender right inguinal lymph nodes. There were no systemic complaints and examination of other sites including oral and perianal areas were unremarkable. Serological tests for other sexually transmitted infections including HIV, hepatitis B and C were negative.

Rapid plasma reagin was reactive only in undiluted serum and not in serial dilutions. To exclude false positivity, we sent the serum for *Treponema pallidum* haemagglutination test along with a smear from ulcer base for Masson-Fontana silver staining. The Masson-Fontana silver stained smear demonstrated multiple spiral slender spirochaetes confirming the diagnosis of primary syphilis [Figure 2]. *Treponema pallidum* haemagglutination test was also reactive in 1:80 titre; the very low titers of both rapid plasma reagin and *Treponema pallidum* haemagglutination test possibly indicated the early phase of primary syphilis.

Injection benzathine penicillin 2.4 million units intramuscular (IM) was administered (1.2 million units in each buttock) after a negative penicillin skin sensitivity test. The genital ulcer healed within one month and rapid plasma reagin repeated after three months and became non-reactive.

The mainstay of syphilis diagnosis includes a demonstration of spirochaetes by dark-ground illumination or direct fluorescent antibody microscopy from ulcer exudates or mucocutaneous lesions, or serologic testing for surrogate markers of *Treponema pallidum* infection.[2,3]

Direct detection methods are particularly valuable in primary syphilitic chancres, as serological tests may be non-reactive. Among the various direct detection methods, only dark-ground illumination and polymerase chain reaction meet Centers for Disease Control and Prevention (CDC) criteria for laboratory confirmation of syphilis.[4]

Direct fluorescent antibody is not routinely performed in clinical settings because of high cost and the requirement of expert manpower to accurately interpret the results.

Availability, expertise and operational difficulties associated with dark-ground illumination make it a very subjective test with low sensitivity.

Direct fluorescent antibody, *Treponema pallidum* specific immunohistochemistry and polymerase chain reaction detection methods are not available at our centre and dark-ground illumination from wet smear failed to demonstrate spirochaetes. Thus, we decided to use Masson-Fontana silver stain for directly staining the spirochaete, to reduce subjective error.

An impression smear was made from the chancre using a sterile glass slide and air-dried. In the laboratory, the smear

was first treated by Fontana's fixative containing formalin and glacial acetic acid. After fixation, it was treated with Fontana's mordant containing tannic acid to increase the affinity of the stain. Following fixation, the smear was treated with alcohol and covered with Fontana's stain containing ammoniacal silver nitrate and heated till steam appeared. The smear was washed with water, air-dried and observed using oil immersion microscopy. The silver oxide precipitated on the organism, increasing its diameter and staining it brownish-black.

Further studies are required to ascertain the reliability and validity of this test for diagnosing primary syphilis. Masson-Fontana silver stain provides direct evidence of spirochaetes and hence can be used as a supplemental or confirmatory test for primary syphilis, especially in early cases with ambiguous serology.

Declaration of patient consent

Patient's consent not required as patients identity is not disclosed or compromised.

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Conflict of interest

There are no conflicts of interest.

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References

1. Kojima N, Klausner JD. An update on the global epidemiology of syphilis. Curr Epidemiol Rep 2018;5:24–38.
2. Carlson JA, Dabiri G, Cribier B, Sell S. The immunopathobiology of syphilis: The manifestations and course of syphilis are determined by the level of delayed-type hypersensitivity. Am J Dermatopathol 2011;33:433–60
3. Golden MR, Marra CM, Holmes KK. Update on syphilis: Resurgence of an old problem. JAMA 2003;290:1510–4.
4. Forrestel AK, Kovarik CL, Katz KA. Sexually acquired syphilis: Laboratory diagnosis, management, and prevention. J Am Acad Dermatol 2020;82:17–28.

Acquired anonychia secondary to onychotemnomania

Sir,

A 53-year-old housewife presented to us with complaints of loss of toenails since three years and recurrent painful lesions on both the feet since six years. She gave a history of cleaning floors, clothes, utensils, etc., repeatedly and frequent bathing (3–5 times a day). Also, she used to cut "dead skin" with shaving blades made of stainless steel. She used to trim nail plates "too short" and subsequently lost all toenails over a period of 2–3 years. There was no history of dermatoses or trauma affecting the toenails or the periungual areas. Her past medical history was non-contributory. On examination, anonychia of all toes was noted. The skin of the feet including web spaces was white and macerated. There were multiple ulcers of different shapes, sizes and depth, distributed randomly over the feet, including the toes [Figures 1a and 1b]. The skin of hands showed maceration, erythema and superficial erosions, especially in the web spaces and palmar creases. However, the nails of the hands looked unremarkable. Mucocutaneous and systemic examination did not reveal any other abnormality. A clinical diagnosis of cutaneous candidiasis was made and was confirmed by Potassium hydroxide (KOH) mount done from skin scraping from the right 1st web space and from the lateral aspect of the right foot. Additionally, she had self-inflicted injuries to the skin and nail unit (onychotemnomania), accounting for the ulcers and acquired anonychia respectively. Other common causes of acquired anonychia, i.e., vesiculobullous diseases (epidermolysis bullosa, pemphigus vulgaris), Stevens-Johnson Syndrome/Toxic Epidermal Necrolysis and nail lichen planus were clinically excluded based on the history of trauma in the form of self-inflicted injuries; and absence of vesiculobullous lesions, skin fragility, epidermal necrolysis, mucosal erosions, and signs of nail unit lichen planus (pterygium, nail plate surface changes, etc.). She was

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