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Case report

Nevus Lipomatosus Cutaneous Superficialis: A Case Report from Tripoli, Libya

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ABSTRACT

Nevus lipomatosus cutaneous superficialis (NLCS) is a rare benign hamartomatous lesion characterized by ectopic mature adipocytes within the dermis. We present the case of a 24-year-old Libyan male with asymptomatic, multiple, soft, yellowish papules and nodules localized to the left buttock. The lesions had been present for several years and gradually increased in size. Systemic examination and laboratory findings were unremarkable. Histopathological analysis revealed clusters of mature adipocytes interspersed among dermal collagen bundles and surrounding subpapillary vessels, extending into the papillary dermis. The clinical and histological features were consistent with classical NLCS. The condition is benign, with no systemic associations or malignant potential. Treatment is unnecessary unless for cosmetic reasons, with surgical excision or CO_2 laser ablation as options. To the best of our knowledge, this is the second case reported in Tripoli, contributing to the limited regional literature and reinforcing the importance of recognizing NLCS to avoid misdiagnosis and unnecessary interventions.

Introduction

Nevus lipomatosus cutaneous superficialis (NLCS) is a rare benign hamartomatous lesion characterized by ectopic deposition of mature adipocytes within the dermis, without continuity with subcutaneous fat [1]. First described by Hoffmann and Zurhelle in 1921 [2], NLCS typically presents either as the classical type, with multiple grouped papules or nodules in a zosteriform distribution, or as the solitary type, manifesting as a single dome-shaped lesion [3,4]. The condition is usually asymptomatic, discovered incidentally, and most commonly affects the buttocks, thighs, and lower back [5].

Although its pathogenesis remains unclear, proposed mechanisms include adipose metaplasia of dermal connective tissue, developmental displacement of adipose tissue, or perivascular differentiation of lipoblasts [6–8]. Histopathology is diagnostic, showing mature adipocytes interspersed among collagen bundles in the dermis [9].

Case Report

We report the case of a 24-year-old Libyan male who presented with a history of asymptomatic multiple papules and nodules localized to the left buttock. The lesions had been present for several years and had gradually increased in size. On dermatological examination, there were non-tender, linear, grouped, yellowish, soft papules and nodules ranging from 0.5 to 1.5 cm in diameter, confined to the patient's left buttock (Figures 1 and 2). The lesions were well-circumscribed, with no evidence of ulceration, discharge, or surrounding erythema.

Systemic physical examination was unremarkable, and routine laboratory investigations, including complete blood count, liver and renal function tests, and lipid profile, were all within normal limits.

Histopathological examination of a skin biopsy revealed clusters of ectopic mature adipocytes interspersed among collagen bundles and surrounding the blood vessels of the subpapillary plexus. Adipocytes were also identified within the papillary dermis (Figures 3 and 4). No atypia, necrosis, or inflammatory infiltrate was observed.

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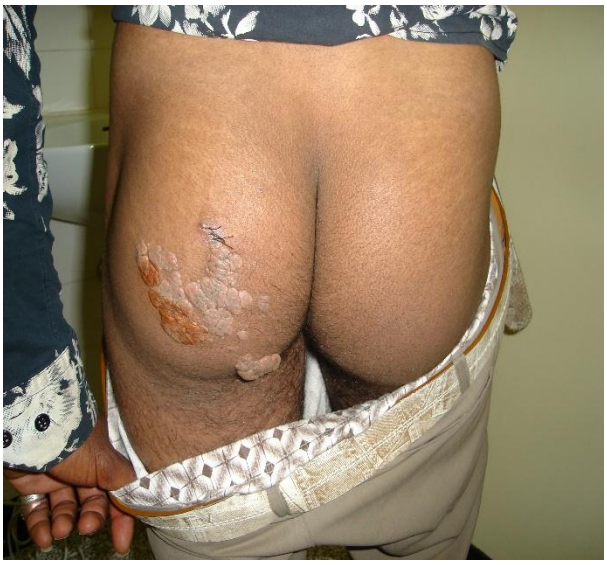

Figure 1. Clinical photograph showing grouped, soft, yellowish papules on the left buttock.

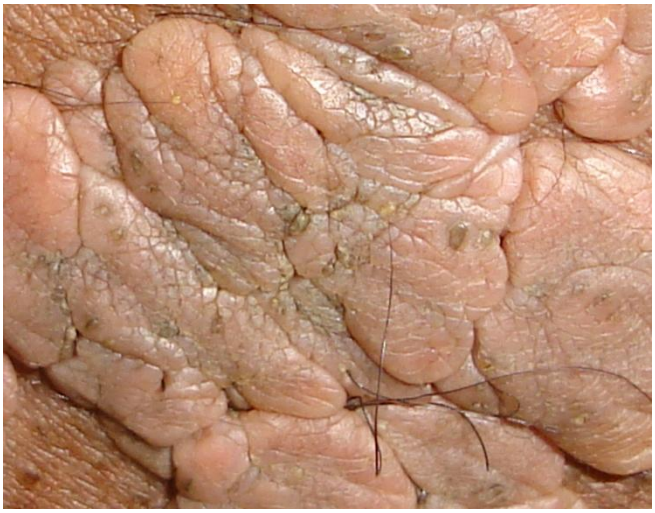

Figure 2. Close-up view of nodular lesions ranging from 0.5 to 1.5 cm in diameter.

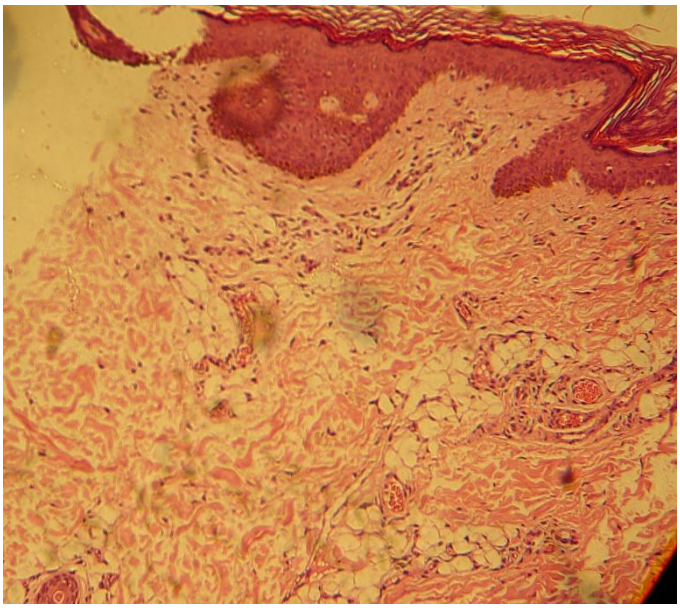

Figure 3. Histopathological section demonstrating clusters of mature adipocytes interspersed among dermal collagen bundles (H&E stain, ×100).

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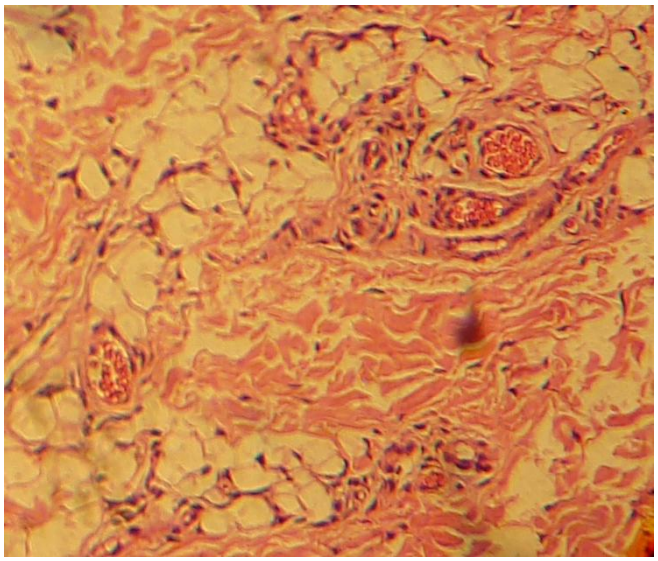

Figure 4. Higher magnification showing adipocytes surrounding subpapillary vessels and extending into the papillary dermis (H&E stain, ×400).

Discussion

The clinical and histological features in this patient are consistent with NLCS, a rare benign hamartomatous lesion characterized by ectopic mature adipocytes within the dermis. The classical type, as seen in our patient, typically presents with grouped papules or nodules in the pelvic girdle region, most often on the buttocks and thighs [10].

Clinically, the lesions are usually smooth-surfaced, though rare cases may exhibit wrinkled or verrucoid morphology [11]. They vary in size, generally appear simultaneously, and often remain unchanged once formed, although some may continue to enlarge over many years [12]. While the buttocks and pelvic girdle are the most common sites, isolated cases have been reported on the face, scalp, shoulder, thorax, and abdomen [13]. Our case represents the second documented occurrence in Tripoli, underscoring the rarity of this condition in the Libyan population.

The exact etiology of NLCS remains uncertain, and there is no definitive explanation for its predilection for the pelvic girdle area [14]. Several theories have been proposed. Hoffmann and Zurhelle initially suggested that dermal adipose deposition was secondary to degenerative changes in collagen and elastic tissue [15]. Other hypotheses include developmental displacement of adipose tissue and perivascular differentiation of lipoblasts [16]. The perivascular clustering of adipocytes observed in our case supports the latter mechanism.

Histologically, NLCS demonstrates groups and strands of mature fat cells embedded among dermal collagen bundles, often extending as high as the papillary dermis [17]. In cases with small deposits, adipocytes are frequently situated around subpapillary vessels. Similar dermal collections of adipose tissue may occur in intradermal melanocytic nevi, pedunculated lipofibroma, and focal dermal hypoplasia; however, clinical correlation and histological distribution help distinguish these entities [18].

Differential diagnoses include neurofibroma, giant fibroepithelial polyp, and lymphangioma [19]. The absence of atypia, systemic abnormalities, or malignant transformation further supports the benign nature of NLCS [20].

Management is conservative, as systemic associations have not been reported. Treatment is unnecessary unless for cosmetic reasons, in which case surgical excision or CO_2 laser ablation may be considered [21].

This case highlights the importance of recognizing NLCS as a distinct clinicopathological entity. Awareness of its benign nature prevents misdiagnosis and unnecessary interventions, while contributing to the limited regional literature by documenting the second reported case in Tripoli.

Conclusion

This case highlights the classical presentation of NLCS in a young Libyan male, localized to the buttock region. The clinical and histological features are characteristic, and recognition of this benign entity is essential to avoid misdiagnosis and unnecessary interventions. To the best of our knowledge, this is the second case reported in Tripoli, contributing to the limited regional literature.

Conflict of Interest

The authors declare no conflict of interest related to this case report.

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Ethical Approval
This case report was conducted in accordance with institutional ethical standards and the principles outlined in the Declaration of Helsinki.

Patient Consent
Written informed consent was obtained from the patient for publication of this case report and accompanying clinical and histological images.

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