

## PHOTOQUIZ

## Localized depression on the buttock in a girl

Marwa Yahfouf MD<sup>1</sup> | Mazen Kurban MD<sup>2</sup> | Ossama Abbas MD<sup>2</sup> <sup>1</sup>Clemenceau Medical Center, Dubai, UAE<sup>2</sup>Department of Dermatology, American University of Beirut Medical Center, Beirut, Lebanon**Correspondence:** Ossama Abbas, MD, Department of Dermatology, American University of Beirut Medical Center, Riad El Solh/ Beirut 1107 2020, Beirut, Lebanon.

Email: ossamaabbas2003@yahoo.com

## CASE PRESENTATION

A 6-year-old girl presented with a four-week history of an asymptomatic localized slowly progressive depression on the right buttock.



FIGURE 1

No history of trauma or intramuscular injections before the appearance of the lesion was reported. The girl was otherwise healthy with no associated medical conditions and was not receiving any medications.

On examination, she had a well-demarcated, 3 × 3 cm, atrophic, hypopigmented, depressed patch with overlying telangiectasias on her right buttock (Figure 1). Laboratory studies including hematologic and serum chemistry tests, and autoantibody screening were within normal. A skin biopsy (Figure 2) was taken.

## WHAT IS YOUR DIAGNOSIS?

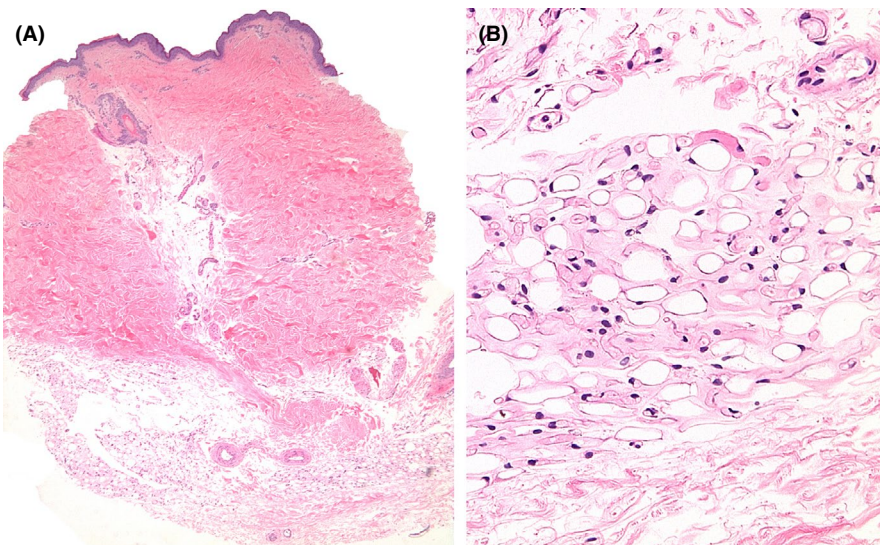


FIGURE 2

## Diagnosis: Localized involutinal lipoatrophy

### MICROSCOPIC FINDINGS

Microscopy revealed non-remarkable epidermis and dermis. The fat lobules were miniaturized, exhibiting small adipocytes in a hyalinized and vascularized stroma and scattered macrophages between the affected adipocytes. No significant dermal or subcutaneous inflammation was noted.

### DISCUSSION

Localized involutinal lipoatrophy (LIL) is a term used to describe the loss of adipose tissue without precedent inflammation. It was first described by Peters and Winkelmann in 1986.<sup>1,2</sup> Most cases present in adolescence or adulthood with very few presenting in childhood. The lesion in LIL is typically a solitary localized, non-inflamed, well-circumscribed atrophic depression. The sites most commonly involved are the buttocks and proximal extremities.<sup>3</sup> LIL is most commonly idiopathic but may be associated with medical conditions such as atopic dermatitis, rheumatoid arthritis, or after injection of various drugs such as insulin, antibiotics, corticosteroids, or vaccines.<sup>1,4</sup>

The pathogenesis of LIL is not very well-understood. CD68 and mucin-positive macrophages are scattered between the affected adipocytes.<sup>5</sup> It is believed that these macrophages, upon activation, secrete a variety of cytokines such as fibroblast growth factor-2, platelet-derived growth factor, and interleukin-1, which may then mediate adipose tissue involution.<sup>1,5</sup> Other inflammatory cells are not prominent in the infiltrate.<sup>3</sup>

In children, LIL is mainly related to subcutaneous or intramuscular injections of drugs or vaccines.<sup>1,6</sup> Cases have been reported with insulin, penicillin, amikacin, corticosteroids, methotrexate, and vaccines. Idiopathic cases reported in the literature are rare.<sup>6</sup> A 2-week to 1-year lapse is reported before the patient presents for medical examination, probably due to the asymptomatic nature of the lesion and unnoticeable sites of involvement.<sup>1</sup>

The differential diagnosis of LIL includes morphea and lupus panniculitis, but these can be differentiated histologically. LIL resolves spontaneously in majority of patients, as was the case in our patient.<sup>1</sup> Antiinflammatory agents, such as topical corticosteroids and tacrolimus, can be used initially to prevent the lesion from expanding. Because localized lipoatrophy tends to resolve spontaneously, many cases require no treatment.<sup>6</sup> However, if lesions persist and are aesthetically unacceptable, treatment may be indicated. Intralesional corticosteroids have been used to treat lesions caused by insulin injections, with favorable results in some cases.<sup>7,8</sup> Also, intralesional administration of saline solution, autologous fat, or poly-L-lactic acid can have beneficial effects and improve the cosmetic appearance of the lesion.<sup>6</sup>

### DATA AVAILABILITY STATEMENT

Data sharing is not applicable to this article as no new data were created or analyzed in this study.

### ORCID

Ossama Abbas  <https://orcid.org/0000-0001-6970-8056>

### REFERENCES

- Sharma RK, Gupta M, Negi L. Idiopathic localized involutinal lipoatrophy: a retrospective study of 12 cases. *Indian Dermatol Online J.* 2019;10(2):149-152.
- Peters MS, Winkelmann RK. The histopathology of localized lipoatrophy. *Br J Dermatol.* 1986;114(1):27-36.
- Dahl PR, Zalla MJ, Winkelmann RK. Localized involutinal lipoatrophy: a clinicopathologic study of 16 patients. *J Am Acad Dermatol.* 1996;35(4):523-528.
- Abbas O, Salman S, Kibbi AG, Chedraoui A, Ghosn S. Localized involutinal lipoatrophy with epidermal and dermal changes. *J Am Acad Dermatol.* 2008;58(3):490-493.
- Hong KC, Noh TW, Baek JH, Kang YS, Lee UH, Park HS. Localized involutinal lipoatrophy in a child. *Ann Dermatol.* 2013;25(1):124-126.
- Vázquez-Osorio I, Rodríguez-Vidal A, Rosón E, Alonso-González J, Vázquez-Veiga H. Localized lipoatrophy in a boy after an intramuscular injection of penicillin. *Actas Dermosifiliogr.* 2016;107(7):620-622.
- Ramos AJ, Farias MA. Human insulin-induced lipoatrophy. A successful treatment with glucocorticoid. *Diabetes Care.* 2006;29:926-927.
- Welheim HT, Westerlaken C, van Pinxteren-Nagler E, Bocca G. Lipoatrophy in a girl with type 1 diabetes: beneficial effects of treatment with a glucocorticoid added to an insulin analog. *Diabetes Care.* 2012;35:e22.