Lipoatrophia Semicircularis
- A Case Report and Review of the Literature

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Lipoatrophia semicircularis is a rare condition manifested by semicircularly horizontal depressions on the anterolateral aspects of the thighs. Most of the patients are females. Previous literature has shown that repeated external trauma is the most plausible explanation, though in some cases, no underlying traumatic mechanisms are found. We herein report a case of lipoatrophia semicircularis in a female patient who has noticed this condition for two months. The clinical history revealed repetitive pressure on her thighs during the work. Previous reports in the literature are reviewed. (Dermatol Sinica 24: 201-204, 2006)

Key words: Lipoatrophia semicircularis, Repeated external trauma

半圆形脂肪萎缩是一种罕见疾病，其特征为位于大腿前及侧边之半圆形水平凹陷。病患多为女性。虽然少数病例无外伤因素存在，但多数文献报告均认为重覆外力伤害是最可能之病因。我们在此报告一例半圆形脂肪萎缩之女性病人，其病程有两个月。临床病史显示病人因工作时紧靠机器而造成重覆施压於大腿。本文也将先前文献报告做一回顾。 (中華皮誌 24: 201-204, 2006)
INTRODUCTION
Lipoatrophia semicircularis is rare with around 100 cases reported in the literature.\textsuperscript{1-12} It manifested as semicircular, horizontal, band-like depressions on the anterolateral aspects of the thighs. Most of the patients are women. The cause is unknown, but pressure has been postulated to contribute to its etiology.\textsuperscript{1-12} We presented a new case of female patient who worked in a factory. Repeated trauma was identified as a trigger factor.

CASE REPORT
A 39-year-old woman presented with a 2-month history of an asymptomatic, linear depression on the anterolateral aspect of left thigh (Fig. 1, 2). The overlying skin was normal. Her past medical history was unremarkable. The patient did not receive injections of insulin, corticosteroids or acupuncture and she did not remember previous trauma to the lesion.

The patient worked in a small factory. Tracking back her history, she remembered working with a new vertical machining center since six months ago (Fig. 3). While working, she had to lean forward pushing her thigh against the edge of the machine. The location of the atrophic lesion coincided exactly with the height of the machine edge (Fig. 4).

On examination, the lesion was approximately 2 cm wide, flesh-colored band-like semicircular depression located horizontally on the anterolateral aspect of the left thigh without change in consistency. The overlying skin was normal.

\textbf{Fig. 1}
Atrophic bands on anterolateral aspects of the thighs.

\textbf{Fig. 2}
Close observation of the semicircular, horizontal depression on the anterolateral aspect of the left thigh.

\textbf{Fig. 3}
New vertical machining center.

\textbf{Fig. 4}
The lineal depression coincided with the edge of the machine.
normal. No tenderness, swelling or inflammatory signs had preceded the lesion. On close inspection, the right thigh showed a similar depression, but was much less discernible. Histopathology showed mild atrophy of epidermis, normal dermis and some small- to medium-sized lipocytes with intervening hyaline tissue. (Fig. 5, 6).

DISCUSSION
Lipoatrophia semicircularis is rare with around 100 cases reported since it was first described in three patients by Gschwandtner and Munzberger in 1974.1-12 This form of lipoatrophy is characterized by band-like horizontal depressions, measuring 2-4 cm in width, on the anterolateral aspects of the thighs. The overlying skin is usually normal. The lesions are usually symmetrically located on both thighs, but unilateral cases have been reported. Most of the patients are females in their twenties and thirties. The lesions tend to develop quickly in most cases and are usually asymptomatic. After avoiding the trauma, the lesions resolve within 2 weeks to 4 years.1, 3, 4, 6, 8, 9, 11

Since the condition is mild, most of the patients refused to undergo biopsy. On microscopic examinations, some authors reported partial or complete loss of fat replaced by new collagen with no signs of inflammation, but others did not find consistent abnormalities.2-4, 13 Laboratory parameters in all cases were normal.

The cause of lipoatrophia semicircularis remains unknown. Many reports support the mechanical explanation.1-12 Nagore et al. reported 7 cases of lipoatrophia semicircularis and the detailed clinical history revealed precipitating trauma in all cases (e.g., knocking against the edge of a table, chair, laundry, and wearing tight-fitting jeans).3 Gruber and Fuller found 7 cases in the same office and they also observed that the site of indentations on the thighs in all cases were 74 cm from the floor, corresponding to the exact height of the desks in the office.1 They suggested that repeated trauma to the

Fig. 5
Mild atrophy of epidermis and normal dermis (H & E, x20)

Fig. 6
A: Some small- to medium-sized lipocytes with intervening hyaline tissue. (H & E, x40) B: Higher power of image A. (H & E, x100)
thighs by the sharp edge of the desks was the most likely explanation.1 De Groot identified 10 cases of lipoatrophia semicircularis in a 300-employee firm.6 The author suggested that pressure on the backs of the thighs from the chair, together with direct pressure from the desk on the anterior thighs were responsible for the lesions.6

In our case, the patient used to work with an old machine and there were no symptoms and signs before. Around 6 months ago, she began to work with the new machine which had sharp edge. The lesion appeared on her left thigh 4 months later. While working, she leaned her thighs against the edge of the machine. The position of the indentation on her left thigh corresponded exactly to the height of the machine edge. This evidence supports that repeated trauma to the thigh by the sharp edge of the machine was the most likely cause in our case.

In conclusion, we suggested that repeated minor trauma to the anterolateral thighs was the most possible explanation of semicircular lipoatrophy. Since the condition is mild, most patients do not consult a dermatologist and the disorder is unrecognized. The disease might be more common than actually reported. We emphasize on the careful history taking to identify the possibility of trauma in the lipoatrophia semicircularis.

REFERENCES