with an inflammatory halo and tend to disappear. Moreover, histological findings are different from our results. We had no evidence for other inflammatory skin diseases following Blaschko's lines such as linear discoid lupus erythematosus or lichen striatus. Linear pigmentary disorders such as pigmentary mosaicism (naevoid hypermelanosis) or the pigmentary stage of incontinentia pigmenti were also excluded. The aetio-pathogeny of LAM remains unknown, but its Blaschko-linear pattern suggests mosaicism for a hitherto unidentified mutation.[5]

C Ripert,* P Vabres
Department of Dermatology, University Hospital of Dijon, 21000 Dijon, France
*Correspondence: C Ripert. E-mail: ripertcathy@yahoo.fr

References

1 Moulin G, Hill MP, Guillaud V *et al*. Bandes pigmentées atrophiques selon les lignes de Blaschko. *Ann Dermatol Venerol* 1992; **119**: 729–736.
2 Baumann L, Happle R, Plewig G, Schirren CG. Atrophodermia linearis Moulin: Ein neues Krankheitsbild, das des Blaschko-Linien folgt. *Hautartzt* 1994; **45**: 231–236.
3 Buechner SA, Rufli T. Atrophoderma of Pasini and Pierini. Clinical and histopathologic findings and antibodies to *Borrelia burgdorferi* in thirty-four paients. *J Am Acad Dermatol* 1994; **30**: 441–446.
4 Hauser C, Skaria A, Harms M, Saurat JH. Morphoea following Blaschko's lines. *Br J Dermatol* 1996; **134**: 594–595.
5 Danarti R, Bittar M, Happle R, König A. Linear atrophoderma of Moulin: postulation of mosaicism for a predisposing gene. *J Am Acad Dermatol* 2003; **49**: 492–498.

DOI: 10.1111/j.1468-3083.2009.03371.x

980-nm laser diode and treatment of subcutaneous mass in Proteus-like syndrome

Editor

There are different pathologies in children that can alter their body morphology by causing asymmetry from unilateral or partial hypertrophy, and by localized distorting masses spread in a haphazard distribution, increasing with time. Among them we find Proteus syndrome and a number of Proteus-like syndromes long considered erroneously 'incomplete forms' of Proteus syndrome.[1,2] Studying these deforming masses, we find that some consist entirely of adipose tissue,[3] while others are a mix adipose and fibrous tissue, and finally a subset adds lymphatic and capillary tissues to varying degrees. Magnetic resonance imaging (MRI) easily demonstrates whether the predominant component is adipose tissue, but the latter is often to some extent resistant to lipo-aspiration. We were confronted with this situation in a child with a Proteus-like syndrome, who presented to our clinic with a deforming lumbar mass.

A 5-year-old child with a Proteus-like syndrome had a right-sided lumbar mass in close proximity to a capillary malformation and associated with progressive overgrowth of the left lower limb. An MRI of the lesion demonstrated predominantly adipose tissue associated with cutaneous and subcutaneous slow-flow vascular structures, without involvement of the underlying muscles. Lipo-aspiration had previously been carried out in our department with poor results.

Due to the limitation of lipo-aspiration, the complexity of alternative surgical procedures, and their recurrence rate, we decided to use in this patient laser lipolysis: a technology that is capable of both reducing localized adipose deposits and retracting the skin.

The laser we used was a diode laser lent by Osyris (Hellemmes, France), 980 nm® Pharaon model. The laser has a wavelength of 980 nm with an optic fibre of 600 μm that is inserted into fatty tissue via a 1-mm diameter cannula. The thermal heat generated during each treatment was indirectly monitored using an infrared thermal camera (Flir System, Issy-Les-Moulineaux, France) with the optimal temperature of skin between 40 and 43 °C.

To perform the laser treatment, two entry points for the cannula were used: posterior iliac crest and lateral extremity of the lumbar mass. Five target areas were marked: three tiered centrally from superiorly to inferiorly and laterally on each side. We used four power regimens during treatments: 12 W, followed by 15 W, then 18 W followed by 20 W for the volume. This was followed by a strict subcutaneous passage of the cannula at 8 W. The total distribution of energy was 50 000 J. Immediate aspiration following thermal heating displayed serous liquid but no fat.

The postoperative course was unremarkable for 10 days until the child was readmitted for 3 days with localized pain and fever, but without any sign of local infection. One month later, a tender lumbar mass, with local fluctuation, indicated the presence of a collection that was evacuated. Cytology of samples revealed altered polymorphonuclear leucocytes, common skin flora lymphocytes, fibrin and very few adipocytes. The child remained constitutionally well throughout this episode.

At 6 months postoperatively, there was a visible reduction of the lumbar mass (Figs 1 and 2).

Laser lipolysis is an easy to use technique. Its mechanism of action is the release of the adipocyte's contents by thermal damage to the cellular membrane following absorption of the laser energy that produces reversible and irreversible histological and enzymatic cellular changes.[4,5] The diode wavelength determines the preferential absorption of laser energy by adipocytes, and the effects on tissue directly correlate with the total energy used to treat the mass.[6–9] This technology was introduced in 1990 in the field of aesthetic surgery.[10] The technology was further developed as an adjunct to facilitate lipo-aspiration by preceding it, simplifying its postoperative management, as well as having the simultaneous effect of skin tightening. It results in a visible

Figure 1 A distorting mass having previously undergone two lipoaspiration procedures without notable improvement : Aspect before lipolysis laser treatment (left), one year after (right).

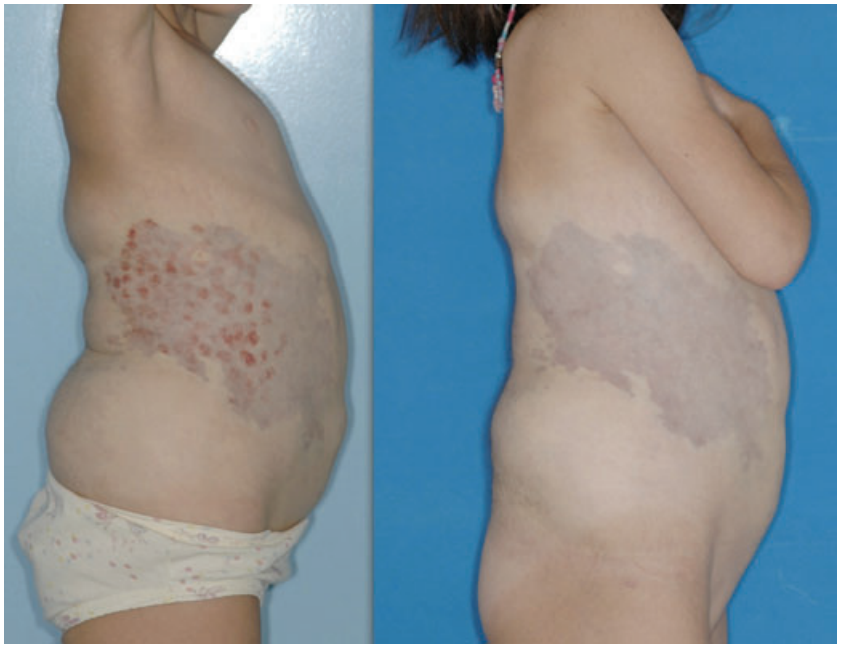

Figure 2 Despite the slightly different position of the child, the posterior bulge is less visible, mainly in the lumbar area. The inferior contour and mass effect on the buttocks are attenuated.

reduction in mass volume in the absence of noticeable scar, limited risk and minimal postoperative care. Given its simplicity, integration of this technique in the treatment of the distorting lipomatous masses in Proteus and Proteus-like syndromes appeared useful in our patient.

J Buis,* O Enjolras, V Soupre, S Roman, MP Vazquez, A Picard
Hopital d'enfants Armand trousseau, Chirurgie Plastique et Maxillo-faciale, Avenue Dr Arnold Netter, 75012 Paris, France
*Correspondence: J Buis. E-mail: jacquesbuis@hotmail.fr

References

1 Biesecker L. The challenges of Proteus syndrome: diagnosis and management. *Eur J Hum Genet* 2006; **14**: 1151–1157.
2 Turner JT, Cohen MM Jr, Biesecker LG. Reassessment of the Proteus syndrome literature: application of diagnostic criteria to published cases. *Am J Med Genet A* 2004; **130A**: 111–122.
3 Mücke J, Willgerodt H, Künzel R, Brock D. Variability in the Proteus syndrome: report of an affected child with progressive lipomatosis. *Eur J Pediatr* 1985; **143**: 320–323.
4 Badin AZ, Gondek LB, Garcia MJ, Valle LC, Flizikowski FB, de Noronha L. Analysis of laser lipolysis effects on human tissue samples obtained from liposuction. *Aesthetic Plast Surg* 2005; **29**: 281–286.
5 Goldman A. Submental Nd:YAG laser assisted liposuction. *Lasers Surg Med* 2006; **38**: 181–184.
6 Van Veen RL, Sterenborg HJ, Pifferi A, Torricelli A, Chikoidze E, Cubeddu R. Determination of visible near-IR absorption coefficients of mammalian fat using time- and spatially resolved diffuse reflectance and transmission spectroscopy. *J Biomed Opt* 2005; **10**: 054004.
7 Ichikawa K, Miyasaka M, Tanaka R, Tanino R, Mizukami K, Wakaki M. Histologic evaluation of the pulsed Nd:YAG laser for laser lipolysis. *Lasers Surg Med* 2005; **36**: 43–46.
8 Prado A, Andrades P, Danilla S, Leniz P, Castillo P, Gaete F. A prospective, randomized, double-blind, controlled clinical trial comparing laser-assisted lipoplasty with suction-assisted lipoplasty. *Plast Reconstr Surg* 2006; **118**: 1032–1045.
9 Mordon S, Eymard-Maurin AF, Wassmer B, Ringot J. Histologic evaluation of laser lipolysis: pulsed 1064-nm Nd:YAG laser versus CW 980-nm diode laser. *Aesthetic Surg J* 2007; **27**: 3263–3268.
10 Dressel T. Laser lipoplasty: a preliminary report. *Lipoplasty Soc Newsl* 1990; **7**: 17.

DOI: 10.1111/j.1468-3083.2009.03373.x

Figure 1 Multiple red nodules on the submammary region.

Case of benign cutaneous plasmacytosis: immunohistochemical and flow cytometry study

Editor

Plasma cell proliferation is included into a wide spectrum of mucocutaneous disorders classified into two groups: the first one, cutaneous and systemic plasmacytosis, is characterized by a disseminated polyclonal plasma cell infiltration and hypergammaglobulinaemia.[1–4] In most cases the clinical course is chronic and benign without a spontaneous remission; in a few cases it is aggressive with a fatal outcome.[5] The second one, cutaneous plasmacytosis, is characterized by an exclusively cutaneous localization with a proliferation of mature plasma cells in the skin.[1–4] Most of the cases reported are Japanese and the age of the onset is between 20 and 62 years, and the course of the disease is typically chronic and resistant to therapy.[4,5] The pathogenesis is unclear and it could be related to an unspecific inflammatory response to exogenous and traumatic agents, such as infections, friction, and poor hygiene.[6]

A 78-year-old Caucasian woman had suffered, for 4 months, from intense erythema and asymptomatic red nodules of 0.5 cm in diameter on the submammary region, which were treated with systemic and topical steroid and antifungal agent without any improvement (Fig. 1).

Chemical laboratory analysis, urinalysis, serological examination for syphilis, *Borrelia burgdorferi*, hepatitis B and C, autoimmunity analysis, and microbiological examination on the cutaneous lesions were negative. Chest X-ray, abdominal ultrasound and bone marrow biopsy eliminated the possibility of systemic involvement.

Histological findings showed, in the epidermis, mild acanthosis with exocitosis of lymphocytes, plasma cells and neutrophils. The dermis revealed a dense infiltration of plasma cells with some neutrophils and lymphocytes. No atopy or mitosis was observed.

Immunohistochemical and flow cytometry study showed plasma cell population that are CD38/CD138/CD45/CD19 positive and CD20/CD56/CD117 negative, consistent with normal phenotype. Flow cytometry of the lymphoid-side population revealed a prevalence (70%) of CD3-positive T lymphocytes and a minority (25%) of CD19- and CD20-positive lymphoid cell with a normal surface immunoglobulin kappa/lambda light chains ratio (Fig. 2).

We have reported this case of cutaneous plasmacytosis because it is different from the cases described in the literature, with regards to the age of onset, the short course of clinical manifestations, the localization on the intertriginous regions, and the resolution of the disease by reduction of cutaneous friction and application of aqueous eosin 2%. The pathogenesis could be correlated to an immunological reaction to infection and/or trauma as occurs in submammary regions.