Net Letter

Autologus fat transfer for restoration of facial contour in "Progressive facial hemiatrophy"

Sir,

A 20 year old female reported with right sided facial hemiatrophy of four years duration. Skin examination revealed atrophic patch on right side of forehead extending caudally along the right nasolabial fold and involved right alar cartilage as well which was hypoplastic leading to a narrow nostril [Figure 1a]. Skin over involved areas was smooth, could be easily pinched up on palpation and was not dyspigmented. Alopecia was present over right fronto-parietal area, medial half of right eyebrow and right upper eyelid.

Routine blood investigations, X-ray skull, Dental orthopantogram, CT scan of brain were normal. Skin biopsy from scalp showed atrophied epidermis, thick collagen bundles surrounding eccrine glands and no evidence of inflammation. We kept a differential diagnosis of progressive facial hemiatrophy and linear localised scleroderma (LSc) "en coup de sabre" as both these entities simulate each other. We counselled the patient about the incurable nature of the conditions and offered her autologous fat transfer to correct her facial contour as it had been four years since the atrophy had set in and also she was seeking marriage proposals.

The procedure was done under local anaesthesia using the tumescent technique. Tumescent fluid was constituted by adding 20 ml of 2% lignocaine, one ml of 1:1000 adrenaline and three ml of 8.4% soda-bicarbonate in 400 ml of Ringer's lactate. About 100 ml of this tumescent fluid was infiltrated around umbilicus. A small stab incision, 5 mm deep was made below the umbilicus and a 10 cc syringe with 16 gauge needle was used to aspirate out the fat, after creating vacuum in the syringe by drawing back its plunger and moving the syringe back and forth repeatedly. We aspirated 30 cc of fat mixed with blood and subjected it to centrifugation at 3000 rpm for 10 minutes. The harvested material separated into a top layer of pure fat and bottom layer of blood debris. The layer of purified fat was separated and transferred to separate syringes. We obtained around 20 cc of purified fat.

The area of the face (forehead and nose) to be augmented was marked. With the help of 22 gauge intravenous cannula fitted over syringe containing the fat graft, the fat was injected in a linear fashion and over correction was carried out to cater for subsequent fat resorption. A total of 15 cc of fat was injected in the forehead area and remaining 5 cc in the lateral side of nose. The patient was kept under observation for three days and was given parenteral antibiotics and local dressings. Later the patient was kept on regular follow- up on OPD basis [Figure 1b].

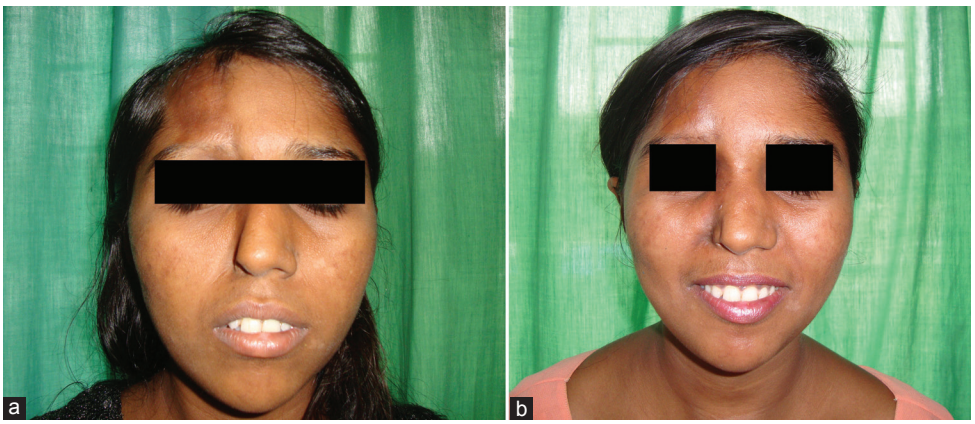

Figure 1: (a) Right sided facial atrophy with hypoplastic right nostril and alopecia over right frontal area of scalp. (b) Restored facial contour

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Progressive facial hemiatrophy (PFH) or "Parry-Romberg syndrome" is a rare disorder, characterized by progressive atrophy, affecting the skin, soft tissues, muscles and underlying bony structures occupying one or more trigeminal dermatomes over one side of face.[1] The disorder is more common in females and begins in first or second decade of life. The progression of atrophy lasts for two to ten years and then tends to stabilize.[2] The range of severity differs from only aesthetic disfigurement to severe cases with atrophy and neurological abnormalities.[2,3]

The relationship between PFH and linear localised scleroderma (LSc) "en coup de sabre" is not clearly understood. However, Orozco-Covarrubias *et al*,[4] pointed out that in most cases it is possible to differentiate between them. They found that the most important differentiating clinical feature was 'skin pliability' (seen in our case), presence of which favoured diagnosis of PFH. Statistically significant histopathological features were connective tissue fibrosis, adnexal atrophy and mononuclear cell infiltrate (superficial and deep), favouring a diagnosis of LSc 'en coup de sabre'.

Restoration of the facial contour is the main challenge in management of PFH. Several alternatives suggested to correct the defects of the face are dermal fat grafts, cartilage grafts, liquid silicone, hyaluronic acid, poey-L-lactic acid.[5] Autologous fat graft has been considered as an ideal filler[5,6] for soft-tissue augmentation because it is readily available, biocompatible, inexpensive, and can be harvested repeatedly, with minimal trauma to the donor and recipient sites. Synthetic materials have a risk of local inflammatory reaction, extrusion, pigmentation and scars besides being expensive.[5]

Since the advent of dermatosurgery it has become important for dermatologists to acquire skills to carry out such procedures. Plastic surgeons routinely carry out fat transfer by using sophisticated instruments, but we have overcome that drawback by using very simple ones. We report this case for stressing the role of dermatological surgery in relieving the serious aesthetic damage to patients suffering from this syndrome.

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