Efficacy of Platelet Rich Plasma in the Treatment of lipoatrophy

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Introduction and Objectives

Localized involutional lipoatrophy (LIL) is a rare asymptomatic, idiopathic form of localized lipoatrophy seen in dermatological practice. LIL usually presents as a solitary, localized, well demarcated, fresh colored, asymptomatic, atrophic depression. It frequently develops on the injection areas [1,2].

Platelet-rich plasma (PRP) is highly concentrated autologous solution of plasma prepared from a patient’s own blood. PRP contains platelets that are purported to release numerous growth factors that may be valuable in numerous dermatologic applications. We know the addition of platelets and their associated growth factors opened new possibilities, for the treatment of chronic skin ulcers. Therefore the application of PRP; for lipoatrophy treatment is a new treatment [3-6].

Material and Methods

18-year old female patient was admitted to our outpatient clinic with thinning and disfigurement complaint of her skin on her hip (Figure 1).

She said that her problem started when she was a month old baby. The lesion was 0.5 cm in diameter and increased overtime. By dermatological examination; 25 cm diameter, sharply demarcated, skin color, depressed, a trophic plaques were observed on left gluteal area. She had no history of any injury or injection or operation at the site. Skin biopsy was consistent with the results of lipoatrophy (Figure 2).

PRP is prepared in various forms. Pure PRP is the most commonly used form consisting of a buffy coat with a large number of platelets with little leukocytes being collected. PRP contains various growth factors contained in alpha granules and dense granules. Alpha granules contain seven fundamental
growth factors: the platelet derived growth factors (PDGFαα, PDGFββ, and PDGFββαα), transforming growth factor beta (TGFββ1 and 2), epithelial growth factor (EGF), and vascular endothelial growth factor (VEGF) [4].

In recent years PRP is frequently used in cosmetic dermatology. Good outcomes for other dermatological indications such as skin ulcers and alopecia have been reported in studies [6]. It is used more often in procedures such as fat grafting or soft tissue augmentation due to the slower secretion over a longer time period [7].

Results

Localized involutional lipoatrophy (LIL) is a rare a symptomatic, idiopathic form of localized lipoatrophy. Most of the patients are women. Lesion is frequently solitary. Mostly buttocks and proximal extremities are affected. Our patients also had the same properties. Laboratory examination showed normal findings; except Total IgE: 294U/ml (normal: 0-87), eosinophils 20.2% (normal: 0.8-4). Histological examination showed fat lobules composed of small lipocytes in the hyaline connective tissue. LIL is characterized by non inflammatory focal loss of subcutaneous tissue [8].

Conclusion

In the last decade, several smaller studies were performed, demonstrating the positive effect of PRP on wound healing, the formation of granulation tissue and neo-vascularization [4,6].

After activation, platelets synthetize and secrete a number of cytokines and growth factors, the most important ones being platelet-derived growth factor (PDGF), transforming growth factor beta-1 (TGF-β1), vascular endothelial growth factor (VEGF) and epidermal growth factor (EGF). In one study, PRP and fat graft were used to dilate the gluteal augmentation [7].

A total of 10 sessions PRP was administered every 2 weeks (Figure 3). The lesion was clinically resolved. Are peat biopsy was taken. Atrophy in the fatty tissue continued. Tissue loss was improved probably because PRP stimulated endothelial cells, fibroblasts, mesenchimal cells, smooth muscle cells for repairment (Figure 4). We treated depression in the gluteal region, not lipoatrophy, with PRP therapy. We didn’t use a fat graft. We used only PRP.

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