

**EVALUATION OF THE TREATMENT OF POST BURN
ATROPHIC SCARS BY AUTOLOGOUS MICROFAT GRAFTING**

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Summary

- Atrophic scars are a cosmetically distressing problem for the patients especially post-burn ones as the patient seek for both restoring volume contour and improving the quality of burn scar .
- To date, no gold standard exists for the treatment of scar tissue. Autologous fat grafting has been introduced as a promising treatment option for scar tissue and its related symptoms. However, the scientific evidence for its effectiveness remains unclear.
- Lowfat graft survival represents the major obstacle. This is in the form of resorption rates fluctuating from 25% to 80%. Insufficient vascularity of the transplant is usually implicated as the cause. This has led to ongoing research into methods to increase graft viability .
- Microfat has been used for decades as a method to transplant fat. It is harvested through suction cannulas, and processed in different manners to be injected as fat clusters through injection cannulas .
- The aim of this study was to evaluate of the role of autologous microfat grafting in improving the aesthetic outcomes (quality and cosmetic appearance) of post-burn atrophic scars and reduction of scar-related symptoms (pain & itching) .

- 10 patients with post-burn atrophic scars at different body areas were reconstructed with autologous microfat grafting .
- Patients' age ranged from 16 to 35 years and they were selected randomly to be treated with microfat grafting. Scald burn was the common etiology of burn in most cases . The abdomen and thigh were the most commonly chosen donor sites.
- Microfat was harvested with a blunt 3 mm cannula with several side holes of 1 mm in diameter and processed by centrifugation at 3000 rpm for 3 minutes to be injected , by a blunt 1.2 mm cannula with single side hole , directly under the scar at the dermohypodermal junction .
- Microfat has shown a significant improvement in the pliability of post-burn atrophic scars , with maximum improvement was after 2 weeks postoperative .
- Also , some insignificant improvement was noticed in pain and as regarding itching , there was insignificant improvement after 2 weeks postoperative and became significant after 1 month postoperative .
- On the other hand , there was no improvement noticed in other parameters of scar quality (vascularity , pigmentation and surface appearance) .

- 7 patients (70 %) showed minimal response while 3 patients (30 %) showed moderate response to the grafted microfat .
- Patients were psychologically satisfied mainly (80 % satisfied) with restoration of volume contour and filling of volume deficits in their atrophic depressed scars . On the contrary , they were not satisfied (80 % not satisfied at all) with the quality of scar or scar- related symptoms (pain and itching) .
- Regarding post-operative complications reported , 4cases (40 %) showed no postoperative complications , 3 cases (30 %) complained of postoperative edema, 2 cases (20 %) had resorption of grafted microfat and 1 case (10%) had postoperative bruising and ecchymosis .
- The preliminary results suggested that microfat has a minimal effect on improving the quality and cosmetic appearance of post-burn atrophic scars and scar –related symptoms (pain & itching) . However , it is an ideal filler and has a great effect on restoring the volume contour of these scars especially the depressed ones .