

SURGICAL REHABILITATION OF PATIENTS WITH POST-BURN SCAR DEFORMITY OF THE FACE AND NECK USING A FREE SKIN GRAFT

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Abstract.

The relevance of the problem. The issue of plasty of extensive post-burn defects of the soft tissues of the head and neck is still open. Microsurgical flaps cannot be used in cases where there are no recipient vessels for revascularization of the graft. **The aim of the study is** to improve the results of surgical rehabilitation of patients with post-burn scar deformity of the face and neck by applying plastic surgery with a full-layer free skin graft. **Materials and methods:** The study included 216 patients with post-burn scar deformity in the face and neck. In the main group – 103 patients, the proposed method of eliminating post-burn scar deformity of the face and neck was performed using a free skin graft (FSG); in the comparison group - 113 patients, various options for the use of FSG were performed according to traditional methods. **The results of the study.** The introduction of various options for the use of a free full-layer skin graft isolated or combined with plasty with local tissues according to an improved technique made it possible to reduce the period of wearing a flap-fixing bandage from 5.2 ± 0.5 to 3.2 ± 0.4 days ($t=33.80$; $p<0.05$). **Conclusion.** An improved method of surgical treatment of post-burn scarring of the face and neck with a free full-layer skin flap is characterized by an improvement in the quality of the graft taken, by reducing the degree of its retraction, as well as stimulation of vascularization, reducing the risk of formation of subcutaneous fluid accumulations, excluding prolonged wearing of a pressure bandage, which generally contributes to a more physiological engraftment of transplanted tissues.

Keywords: HEMOBEN; surgical rehabilitation of patients; post-burn scar deformity; free skin graft.

Introduction. The issue of plasty of extensive post-burn defects of the soft tissues of the head and neck is still open. Microsurgical flaps cannot be used in cases where there are no recipient vessels for revascularization of the graft. At the same

time, microsurgical autotransplantation of tissues requires special equipment and tools, a trained microsurgical team. In light of the above, further research is needed to improve the known and develop new methods of surgical correction of the consequences of burns of the head and neck.

The aim of the study: to improve the results of surgical rehabilitation of patients with post-burn scar deformity of the face and neck by applying plastic surgery with a full-layer free skin graft.

Materials and methods. The study included 216 patients with post-burn scar deformity in the face and neck. In the main group – 103 patients, the proposed method of eliminating post-burn scar deformity of the face and neck was performed using a free skin graft; in the comparison group - 113 patients, various options for the use of FSG were performed according to traditional methods.

Subgroups of patients were divided into isolated use and combined plastic surgery, which was combined with local tissue surgery. Isolated use of FSG was performed in 61 patients in the comparison group, of which 25 in the face area and 36 in the neck area. In the main group, this operation was performed in 54 patients, of which 33 patients in 21 cases in the face and neck area. Combined plastic surgery with CT and local tissues was performed in 52 patients in the comparison group, of which 22 in the face area and 30 in the neck area. In the main group, this operation was performed in 49 patients, of which in 21 cases in the face and neck area – 28 patients.

A method of surgical treatment of post-burn scar deformity of the face or neck with a full-layer skin flap, included a linear horizontal incision with excision of scar tissue, performing head reduction, eliminating tightening scars along the side of the neck with additional incisions, treating the wound surface (recipient zone), excision / fence of a free skin flap for autodermoplasty, performing autodermoplasty, fixing a freely displaced skin flap to the soft tissues of the recipient zone, standard fixation of the head, the wound surface of the recipient zone is treated by applying a powdered composition "HEMOBEN", in an amount of 60 mg for every 4 cm² of the treated surface, and after 5-10 minutes, autoplasm diluted with saline solution in a ratio of 1:1 is applied with a syringe, in an amount of 10 ml per 10 cm² of the surface, before taking a free skin flap from the inguinal area, acute dermotension is performed by implanting a latex rectangular expander under the skin, with a base volume of 40.5 cm², into which 300-400 ml of sterile saline solution is injected, after that, the potential skin flap is irradiated with a Pulse-100 laser device (Uzbekistan) in the infrared spectrum (with a wavelength of 900 nm) with a frequency of 100 Hz, a pulse power of 80-100 W / pulse, for 10 minutes at a distance of 3 cm from the surface of the skin flap in scanning mode over its entire surface, excision a full-layer skin flap is

carried out along the edges of the expander stretching and its perforation is performed with an injection needle, one puncture for each 1 cm^2 , autodermoplasty is performed with the imposition of fixing nodular sutures along the edges of the wound at a distance of 1.0 cm from each other with atraumatic monofilament non-absorbable suture material 4/0, after which the freely moved skin flap is additionally fixed to the soft tissues of the neck in a staggered manner without applying a pressure bandage for 1 suture for every 2.0 cm^2 , in the early postoperative period, irradiation is carried out through dressing of the plastic zone with a laser device "Sogdiana" (Uzbekistan) in the infrared spectrum (with a wavelength of 890 nm) with a frequency of 1300 Hz, with a pulse power of 5-7 W / pulse, for 2 minutes applied to the bandage in scanning mode (over the entire surface of the flap), 2 times a day for 7-10 days.

The results of the study. The introduction of various options for the use of a free full-layer skin graft isolated or combined with local tissue plasty using an improved technique allowed to reduce the period of wearing a flap-fixing bandage from 5.2 ± 0.5 to 3.2 ± 0.4 days ($t=33.80$; $p<0.05$), to reduce the frequency of immediate postoperative complications from 22.1% (in 25 patients in the comparison group) up to 6.8% (in 7 patients in the main group) ($\chi^2= 10.031$; $df=1$; $p=0.002$), respectively, reduce the need to perform invasive methods to eliminate immediate complications from 29.2% to 6.8% ($\chi^2= 17.930$; $df=1$; $p<0.001$) and reduce the duration of the hospital stage after surgery from 11.4 ± 1.4 to 8.5 ± 1.7 days ($t=13.62$; $p<0.05$). Improving the quality of SCL engraftment ensured a decrease in the incidence of long-term complications from 52.2% (in 59 patients in the comparison group) to 24.3% (in 25 patients in the main group) ($\chi^2= 17,701$; $df=1$; $p<0.001$), which required the use of hardware cosmetology in 34.5% and 18.4% of patients, respectively, while the need for repeated surgical intervention decreased from 177% to 5.8% ($\chi^2= 18.375$; $df=2$; $p<0,001$). Accordingly, the reduction in the frequency of development of immediate and long-term results in the main group was able to increase the proportion of excellent plastic surgery results from 47.8% (in 54 patients in the comparison group) to 75.7% (in 78 patients in the main group) and reduce the frequency of unsatisfactory outcomes of operations from 8.8% (in 10 patients) to 2.9% (in 3 patients) ($\chi^2= 18.375$; $df=3$; $p<0,001$).

Conclusion. An improved method of surgical treatment of post-burn scarring of the face and neck with a free full-layer skin flap is characterized by an improvement in the quality of the graft taken, by reducing the degree of its retraction, as well as stimulation of vascularization, reducing the risk of formation of subcutaneous fluid accumulations, excluding prolonged wearing of a pressure bandage, which generally contributes to a more physiological engraftment of transplanted tissues.

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