

Plastic Surgery 2019: The changes of the vessel in delayed flap on experiment and applications in aesthetic plastic surgery

Hai Thanh Nguyen

Viet-Han International Cosmetic Institute, Vietnam, E-mail: drhai2013@gmail.com

Abstract

Introduction: Material for plastic reconstruction is the important problem. Delayed flap is the good method to enlarge the flap with similar color and has good result in reconstruction. Our purposes:

1. Survey the changes of vessels in experimental delayed skin flap.
2. Apply technical delayed flap in aesthetic plastic surgery.

Subject: Experimental study: 60 white rabbits divided into 2 groups (1:1), each group with 3 lots, each lot has 10 rabbits. Evaluate the effect of delay phenomenon by changes in blood vessels and vitality skin flap at the time of delayed 7, 14, 21 days.

Clinically: Application on 15 patients with post-burn chin and neck contracture surgical treated with occipital cervical dorsal delay flap (delayed 14 days). Evaluate the results.

Methods: Experimental study - Delaying surgery undergo two period:

Period 1: Create delay flap: On every rabbit, bi-axial flap is verified along back based on thoracodorsal artery and deep iliac artery. Flap size average 24 x 7 cm. 2/3 distance flap (tail side) is released and elevated by U-shape incision. To isolate the artery supply from below and two side to flap, put a silicone sheet which made hole under flap then close flap. Control flap is symmetric flap on the back of every rabbit.

Period 2: After delayed 7 days (Lot 1), 14 days (Lot 2), 21days (Lot 3), full dissection to the original flap. Group 1: Survey the changes of vessels of the flaps; Group 2: Continue to monitor viability of flaps in 1 week.

Clinical applications:

Period 1: Design occipital cervical dorsal flap according to the size identified, 2/3 distance flap is released and elevated by U-shape incision, flap is thinned and hemostasis. To isolate the artery supply from below and two sides to flap, put a silicone sheet which made hole under flap then close flap.

Period 2 (after delayed 14 days): full dissection to the original flap to reconstruct the wound.

Result: Experiment: The amount of the neovascularity in the connection place: In delayed flap are more than in control flaps the vitality of the dorsal skin flap of rabbits: The ratio of necrosis skin flaps: in delayed flaps are less than in control flaps. Clinic: 15 patients using occipital cervical dorsal delayed flap to reconstruct post-burn chin and neck contracture scar with far results: 85.7% good, 14.3% on average, with no bad results. The size of OCD delay flap can reach: length 36 cm, width of 15 cm, original width 5.5 cm.

Conclusion: In experiment: The delay phenomenon effects increases the vascular connection between nearby branches, increases the vitality of skin delayed flaps compared to non-delayed flaps. In clinic: The application technique of delay to create a large flap, high vitality, similar in color to the skin around the wound is a reliable method for the surgeon, where no conditions to make microsurgery techniques

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