A MODIFIED ABDOMINAL FLAP DESIGN FOR WOUND COVERAGE IN MULTIPLE DIGITAL BURN INJURY (P082)

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Introduction: Work related hand injuries can yield a range of morbidity with disastrous consequences. Particularly, industrial hot press injuries may cause deep contact burns which may lead to total hand soft tissue loss and amputations. In this case report, we aim to present an abdominal flap in which the multiple soft tissue defects following a burn injury has been covered by a smart modification.

Case Report: A 31-year-old-man was admitted to the ER after a hot press injury on his right hand as a result of an occupational accident. Dorsal midphalangeal areas and DIP joints of index, middle, ring, and little fingers suffered deep contact burn, whereas volar surfaces were intact. The burn was observed to penetrate through the full thickness of skin down to the bones and extensor tendons.

The patient was taken to the OR and debridements were performed where extensor tendons were found to be exposed on the 2nd, 3rd, and 4th fingers (Figure 1). The remaining subcutaneous tissue was not favorable for skin grafting. Therefore, a flap coverage was planned using a distant abdominal flap with the described modification.

The random flaps were designed on the right abdominal region according to size and localization of the each finger defect. Bipedicled cutaneous flaps were undermined and thinned carefully to preserve the subcutaneous vascular plexus. The fingers were then inserted into the pockets and each finger was pulled through distal incisions. The proximal and distal flap edges were sutured with 4.0 propylene to the digits. Further stabilization was done with sutures passing in between digits and the abdominal skin (Figure 1). Three weeks after the first surgery, the flaps were detached from the abdominal wall. Minimal maseration was observed on the volar skin surfaces of the fingers. After two months, patient’s hand functions and ROM of the finger joints recovered well. Postoperative first year revealed satisfactory cosmetic appearence and function (Figure 2).

Discussion: This technique allows coverage of all finger defects in a two-stage operation. Compared to conventional one piece abdominal flap, this modification enables a digital coverage without a syndactilization. Therefore, a tertiary procedure was prevented. Furthermore, limited dissection and minimized open wound edges reduce the morbidity and the number of wound dressing changes. Consequently postoperative care was simplified and patient conformity could be improved.

In conclusion, we strongly recommend our distant abdominal flap modification for multiple dorsal finger defects when skin grafting and reconstruction with local tissues are unavailable for wound coverage.

References


Figure Legends:

Figure 1 Abdominal flaps were designed on the right abdominal region. The fingers were inserted into the pockets and each finger was pulled through distal incisions. Three weeks after the first surgery, the flaps were detached from the abdominal wall. Donor areas were repaired primarily with total closure.

Figure 2 Postoperative first year view.