

Discussion

Discussion: Use of the Fix and Flap Approach to Complex Open Elbow Injury: The Role of the Free Anterolateral Thigh Flap

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Current concepts in the management of elbow trauma

Due to the complexity of the structures that are necessary for adequate joint function, elbow trauma remains a challenging injury even for the experienced trauma surgeon. Severe soft tissue loss requires appropriate covering of the underlying structures [1]. The workhorses for elbow cover in the past were the pedicled latissimus dorsi flap and the radial forearm flap; the application of the use of regional flaps depended on the extent of the injury. With the use of pedicled latissimus dorsi flaps, the complication rates are high if the injuries extend distally to the olecranon [2].

The alt flap: advantages and disadvantages

The free anterolateral thigh (ALT) flap is becoming a preferred option for soft-tissue reconstruction and its clinical applications have been broadened [3]. It is a septocutaneous or musculocutaneous flap based on the perforators from the descending branch of the circumflex femoral artery, which could provide a large amount of soft tissue for wound coverage. Adjacent tissue, such as a portion of the vastus lateralis and part of the fascial lata can be harvested as a chimeric-style flap based on its different perforators simultaneously if necessary. Another major factor in elbow reconstructions is the fact that the ALT flap enclosed with the lateral femoral cutaneous nerve provides protective sensibility, which is especially important in the upper limb. A major shortcoming of this flap is its anatomic variation, but with a preoperative Doppler study and a precise intraoperative perforator dissection, the risks of flap failure can be minimized [4-6].

There is little published data on the application of the ALT flap to elbow covering. The detailed study of Choudry et al. [1] showed excellent results by using the ALT free flap and Wang et al. [6] advocated the ALT flap for reconstruction in injuries to the upper extremity.

Summary

Fast improvements in microsurgery have opened new strategies in the field of reconstructive trauma surgery that can be applied to severe elbow trauma management. The disadvantages of pedicle flaps can be overcome in the hand of an experienced trauma surgeon by using free flaps based on the perforators. This provides the patient with the best possible wound cover within the optimal time frame and the treatment of underlying additional structural damage.

Although the authors presented only a small number of cases, the results of this study are promising and encourage the use of the ALT flap for the treatment of severe elbow trauma.

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