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Functional outcomes after scapulectomy and reconstruction

Katsuhiko Hayashi¹, Hiroyuki Tsuchiya², Shintaro Iwata³, Akira Kawai⁴, Takafumi Ueda⁵, Takanobu Otsuka¹

¹) Nagoya City University ²) Kanazawa University ³) Chiba Cancer Center ⁴) National Cancer Center Hospital ⁵) National Hospital Organization Osaka, Japan

Background:

Scapulectomy requires not only joint resection but also wide resection of the shoulder girdle muscles. Even the significance of reconstruction has not yet been determined because of the difficulties in comparing the different conditions. The purpose of this study was to investigate factors to influence functional outcomes after scapulectomy in multicenter study.

Methods:

This retrospective study comprised 48 patients who underwent total or subtotal scapulectomy and followed at least one year after surgery. Patients were registered at Japanese Musculoskeletal Oncology Group affiliated hospitals. Soft tissue reconstruction for joint stabilization was performed when there were enough remaining tissue for reconstruction such as rotator cuff and tendons. In 23 cases, humeral suspension was performed. The average follow-up period was 61.9 months. Multivariate analysis was performed to patient's background to determine which factors influence Enneking functional score or active range of motion.

Results:

The average functional score was 21.1 out of 30. Active shoulder range of motion was flexion 42.7, abduction 39.7, internal rotation 49.6 and external rotation 16.8. The amount of remaining bone influenced functional outcome, which means that preserving glenoid or acromion lead better function compared to total scapulectomy ($p < 0.01$). Factors that influenced functional outcome include amount of remaining bone, soft tissue reconstruction, length of resected humerus, nerve resection, follow-up period, male, number of resected muscles, age, amount of bleeding ($p < 0.05$).

Conclusion:

Although shoulder function was almost eliminated following total or subtotal scapulectomy, minimal resection of bone and soft tissue reconstruction should lead to better function.

E-mail (main author): hayashikatsu830@aol.com