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Comparative Risk of Heterotopic Ossification after isolated MUCL Reconstruction Versus Combined MUCL and arthroscopic spur resection Procedures

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Introduction and Background

Heterotopic ossification (HO) is a known complication following elbow surgery, particularly in procedures involving the medial ulnar collateral ligament (MUCL) and valgus extension overload syndrome (VEOS). While it is commonly hypothesized that simultaneous arthroscopic spur resection for VEOS with MUCL reconstruction could elevate the risk of heterotopic ossification due to increased surgical exposure and soft tissue trauma, direct comparative studies evaluating this risk remain limited.

Purpose is to compare the incidence of heterotopic ossification between patients undergoing isolated MUCL reconstruction and those undergoing concomitant MUCL reconstruction with arthroscopic VEOS surgery, and to determine whether combined procedures are truly associated with an elevated HO risk.

Material and Method

A retrospective cohort study was conducted including patients who underwent either isolated MUCL reconstruction (M group) or combined MUCL and arthroscopic VEOS procedures (MV group). Postoperative radiographs and clinical records were reviewed to assess the presence of HO. The primary outcome was the incidence of radiographically confirmed HO. Secondary analyses included perioperative variables potentially associated with HO development.

Results

A total of 264 patients were included (M group: n=107; MV group: n=157). HO was identified in 4.67% of the M group and 8.28% of the MV group. There was no statistically significant difference in HO incidence between the two groups (p=0.27). Multivariate analysis controlling for confounding variables such as surgical duration and prior elbow trauma revealed no independent association between combined procedures and increased HO risk.

Conclusions

Contrary to previous hypothesis, the addition of arthroscopic VEOS surgery to MUCL reconstruction does not appear to increase the risk of heterotopic ossification. These findings suggest that simultaneous surgical management of MUCL and arthroscopic VEOS procedure may be performed without heightened concern for HO development, provided appropriate perioperative management is employed.

