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Post-traumatic Stiffness of the Elbow

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Due to anatomic and pathoanatomic features of the elbow joint, i.e., a high degree of congruity and confirmity, brachial muscle traversing the anterior capsule, the propensity for comminuted fractures and the unique capsular reaction to the injury, there develops post-traumatic elbow contracture so frequently.

So initial trauma care must be exact and rehabilitation must be thought to prevent this potentially devastating complications of elbow trauma.

Classification of the causes of post-traumatic contracture of the elbow as extrinsic or intrinsic helps in determining the operative plan.

The extrinsic capsuloligamentous contracture can be treated by surgical release, and the heterotopic bone can be removed if it is mature. In extrinsic release, if there need extensive anterior and posterior release or collateral ligament release and repair, hinged distraction device must be used to maintain the stability during the soft tissue are healing.

In intrinsic release, the release of the combined extrinsic capsuloligamentous contracture and heterotopic bone resection are done at first. In simple intra-articular malunion, we must strive to archive normal anatomy by intra-articular osteotomy and osteosynthesis. After extrinsic contracture release, interposition arthroplasty is performed (1) if more than half of the articular surface has been violated and not covered with hyaline cartilage, (2) if significant adhesions cause a avulsion of half of the articular surface, or (3) if a complex malunion causes a refashioning of the articular surface. In interposition arthroplasty, there also need hinged distraction device to keep the joint surface separated and enhance transformation with continuous motion.

Above all, the post-traumatic elbow contracture is common and devastating complications of the elbow trauma. So we must prevent its development by the exact trauma care and fixed contracture must be treated according to the causes, i.e., extrinsic or intrinsic.