

Five Years Experience On The Usage of Synthetic Ligaments In The Upper Limb

Shalimar Abdullah, Jamari Sapuan

*Hand & Microsurgery Unit, Department of Orthopaedics, Faculty of Medicine,
Universiti Kebangsaan Malaysia, Kuala Lumpur, Malaysia*

Damaged tendons or loss of tendon poses a major surgical reconstructive problem. The conventional method harvests donor tendons from palmaris longus, plantaris, extensor digitorum longus or tensor fasciae lata with morbidity and extra operating time.

In rotator cuff, ACL and Achilles tendon repair surgeries, both biological and synthetic scaffolds have been widely used. However both biological and synthetic scaffolds have advantage and disadvantages resulting in possible adverse events.

The hand and upper limb have minimum usage of these scaffolds. Biological scaffold, Zimmer® (Zimmer, IN, USA) have been used in the trapeziometacarpal region but have had 6 out of 16 cases of foreign body rejection whilst a synthetic scaffold, Artelon® (Artimplant AB, Sweden) also utilized in the trapeziometacarpal joint had better outcome. We have not found any studies utilizing scaffolds in the extensor or flexor component of the hand. We utilized the synthetic scaffold, Orthotape® (Xiros plc, Neoligaments, Leeds, UK) (similar to Leeds-Keio) in the extensor and flexor compartments of the hand and in the elbow. We present our clinical findings using Orthotape in ten patients with mixed results.

The synthetic ligament was utilized in three patients in the extensor compartment of the hand from Zones V to VII, five patients in the flexor compartment of the hand from Zones I to V and two patients in the elbow to reconstruct the annular ligament. The ligament extruded in 4 patients. Duration of the ligament retained in the body ranged from 2 months to 5 years. Outcome was excellent in three patients, good in two patients, fair in one patient and poor in four patients. However the severity of trauma and number of surgeries was an important confounding factor.

We note that the ligament does poorly when there is minimal skin cover or underneath a skin graft. However if is situated deep within the elbow, or underneath a thick layer of fascia / muscle or underneath a flap, it has a good outcome.