SUMMARY

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Tendon injuries, specially the extensors are common in the hand and fingers. The extensor tendon injuries are more predisposed to lacerations due to their superficial location on the dorsum of the hand and the minimal amount of subcutaneous tissue between the tendons and the overlying skin. In many areas such as the distal finger joint, the tendon is very thin and subject to rupture with sufficient force ***(Doyle, 1982)***.

Simple loss of continuity of extensor tendons in the hand and fingers is usually not associated with immediate retraction of tendon ends because of the multiple soft tissue attachment and interconnections at various levels ***(Green et al., 1996)***.

The hand and wrist are divided into anatomic zones to help to classify extensor tendon injuries. The commonly used system developed by ***"Verdan"*** uses eight zones ***(Harrison, 1999)***.

Injury of extensor tendon may be secondary to laceration, deep abrasion, crush, avulsion and the majority of extensor tendon injuries are at the joint levels. Penetrating wounds that disrupt the tendon are also prone to enter the joint this is true not only at the interphalangeal joint but also at the metacarpophalangeal joint ***(Doyle, 1982)***.

The extensor tendon injury can be diagnosed through four points :

1- History taking from the patient.

2- Wound examination.

3- Posture of the hand and fingers.

4- Active motion of the hand and fingers ***(Week, 1998)***.

Tendon healing is mediated through two mechanisms :

1- Extrinsic mechanism.

2- Intrinsic mechanism.

Healing of extensor tendons usually require long periods of time to regain the strength ***(Strickland, 1998)***.

Injury at zone I causes **"Mallet"** deformity due to disruption of the terminal extensor tendon at its insertion on the distal phalanx, thus leading to flexion deformity of the distal phalanx. Mallet deformity can be treated according to its cause (closed or opened) or its timing (acute or chronic) into two types :

1- Non-operative treatment including the use of plaster cast and various types of finger splints.

2- Operative treatment including the use of k-wire fixation, tendon suture ***(Nash, 2000)***.

Extensor tendon injuries at zone III are called **"Boutonniere"** deformity. This injury occurs due to injury of central tendon slip insertion into the base of the middle phalanx, the deformity consists of flexion of the proximal interphalangeal joint and hyperextension of the distal interphalangeal joint. The treatment of Boutonniere deformity depends up on its type (acute or chronic) into :

1- Non-operative including splinting and plaster cylinder finger cast.

2- Operative treatment by using K-wire and tendon suture ***(Aronowitz, 1998)***.

Extensor tendon injuries at zone V are considered a human bite until proved otherwise. So, this is a contaminated wound, and thus the

wound should be irrigated with saline, the debridement should be done. Prophylactic antibiotic should be started to cover both aerobic and anaerobic organisms. Tendon is sutured and hand is splinted for 6 weeks ***(Blair, 1992)***.

Splints and exercise programs are now routinely used early in the post-repair period in an effort to assist the functional recovery by influencing the biologic process of collagen synthesis and degradation. Favorable remodeling of the scar around a healing tendon is best accomplished by applying stress to the tendon, which in turn transmits stress to adjacent scar. Many studies demonstrated that immobilized tendons became bound by adhesions by the 10^{th} day after repair. In contrast, tendons that were immediately mobilized had an early restoration of the gliding surface without adhesion in growth ***(Gelberman, 1985)***.