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Thumb and First Web Space Trauma: Education of the Surgical Trainee

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Abstract:

Intro: Opportunities to operate are reduced in the workplace and simulation is becoming an ever expanding source of experience for the surgical trainee. Many cases present out of hours leading to trainees handling complex procedures with little consultant input. We identify the most frequently damaged structures with an aim to focussing training toward the demands of the patient population.

Methods: We conducted a prospective study which involved the collection of patients with thumb and first web space (excluding the nail beds) injuries over two years. Data from 102 such injuries were collected from operative notes at the Royal London Hospital. All injured and repaired structures were documented in the operative notes by a senior registrar or consultant. The details of the operative techniques and procedures were also noted.

Results: 68% of cases were male with an average age of 29. Injuries to the volar aspect were more common (58%) than the dorsal aspect (27%). 55% of cases were same day procedures with a further 16% of cases required 1 day of hospital stay. 70% of injuries were lacerations and 8% were abscesses. The vast majority (78%) of extensor injuries occurred in zone 6. Thumb injuries were a major component of the cases with flexor thumb injuries in zone 2 (42%) and zone 3 (42%). 70% of operations were performed under general anaesthesia only and 24% were under local anaesthesia only. The average tourniquet time was 46.3 minutes. Hand therapy was performed in 48% of cases.

Damaged structures include the abductor pollicus brevis (17%), the flexor pollicus longus (14%), the ulnar digital nerve of thumb (14%), the opponens pollicus (13%), the extensor pollicus longus (10%), the flexor pollicus brevis (10%), the extensor pollicus brevis (7%), the adductor pollicus transverse head (6%) and the adductor pollicus oblique head (6%). All these structures were repaired in 100% of cases.
The radial digital nerve of the thumb was damaged in 11% yet only repaired in 93% of cases. Similarly the volar skin was damaged in 9% yet only repaired in 88% of cases.

Conclusion: In conclusion we identify the abductor pollicus brevis, flexor pollicus longus and ulnar digital nerve of the thumb as some of the most commonly damaged structures. Focussing simulation training on repair of these structures will likely improve surgical practice.

Biography:

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