

Case report: DermaClose used to close forearm fasciotomies

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Case report #28:

The patient is a 66 year old male who fell off a ladder while working outside his house and was brought to the emergency room on 4/13/11. He suffered the following injuries:

- Comminuted displaced fracture of the radial head.
- Dislocation of the radius at the elbow.
- Fractures of the proximal to mid radius and ulna with angulation and overriding.
- Non-displaced fracture of the distal ulna.
- Comminuted fracture of the distal radius with intra-articular extension.

He was placed in a splint and was not brought to the operating room until the following evening (4/14/2011). He underwent the following procedures via two separate longitudinal incisions over the radius and the ulnar. At that time he was also diagnosed with a sub-acute compartment syndrome.

He underwent:

- Open reduction internal fixation of right radial and ulnar shaft fracture.
- Open reduction internal fixation of the right distal radius intra-articular fracture.
- Decompression and expiration of brachial artery of the right forearm.
- Compartment and decompression of both extensor and flexor compartments of the forearm.
- Decompression of the right hand for compartment syndrome.
- Fasciotomies were done as part of the open reduction and internal fixations.

The incisions were left open due to swelling of the soft tissues and compromise of the circulation when closure was attempted. The arm was kept elevated and wounds dressed with bacitracin and Xeroform. Plastic surgery consult was requested that night and he was taken to the operating room on 4/18/11. The radial incision 19cm long by 5.5cm wide and the ulnar incision was 18cm long by 6.5cm wide.

Radial Wound

4/18/11 Pre-op wound 19 X 5.5cm



4/23/11 Day 5 re-application



4/28/11 Closed on day 10



7/20/12 Final follow-up at 15 month



Both radial and ulnar incisions had exposed pointing muscles along the entire length of the forearm. At this time the wounds were irrigated and 3 DermaClose® devices were placed on the ulnar incision and 2 DermaClose devices were placed on the radial side. Ten skin anchors were placed on each skin edge of the radial wound. The DermaClose devices were placed and tightened. The radial wound decreased from 5.5cm to 3cm. Prior to tightening the radial side, the ulnar side width was initially 6.5cm but upon tightening the radial DermaClose the ulnar wound width increased to 7cm. Upon tightening up the ulnar side device, the wound width had closed down from 7cm to 5cm. During the hospitalization the wounds were growing acinetobacter and the patient was placed on Levoquin. The patient was taken back to the operating room on 4/23/11 (Day 5 post application). The DermaClose device decreased the ulnar wound from 5cm to 4.5cm. The radial wound was 3.5cm which was slightly wider than it was at the first operation. The skin anchors were repositioned and devices were re-tightened and the ulnar side now measured 3 to 3.5cm at the widest and the radial side was 2-2.5cm. 3-0 permanent sutures were placed at the ends of both wounds closing them down. The wounds were again treated with bacitracin and Xeroform dressings and the DermaClose left in place to continue to exert force on the wound edges. The patient was returned to the operating room on 4/28/11 two weeks after the patient's initial

orthopedic procedure/fasciotomies and ten days post DermaClose application. The wounds were almost completely opposed on the radial aspect except at the distal radial wound where the defect was 1.5cm but the skin was held apart by the soft tissue bulging out. The ulnar wound was 1cm apart. After curetting the wounds the DermaClose devices were tightened down bringing the wound edges completely together and the skin was sutured with 3-0 permanent sutures. The wounds were dressed with bacitracin and Xeroform and gauze. The patient was discharged on 5/1/2011 with VNS. He returned for follow-up day 2, 5 and 15 post closure. The wounds were closed and healing well despite the swelling. The patient was seen again on 7/15/2011 (day 76 post-closure) and the wounds were healing well. The patient has full function. Initially there was concern that placing both of the devices on opposing wounds (ulnar and radial) could recreate compartment syndrome or that the stretching forces were opposing each other and might balance out the stretch and either make it harder to close or compromise the skin circulation because of the simultaneous pulling and opposing forces. These fears were quickly alleviated when it was noted the skin stretched immediately and circulation appeared to be good. On 7/20/2012 (see photos) the wounds had healed well with minimal hypertrophy and resolving hyperpigmentation where the skin anchors had been placed.

Ulnar Wound



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