Metacarpal Distraction Osteogenesis And Webspace Reconstruction For Grenade Blast Injury Of The Hand. A Case Report.

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INTRODUCTION:

Hand grenade injury is rare in Malaysia. This blast injury can cause significant loss of function in hand. Reconstruction options depends on various factors.

MATERIALS & METHODS:

Mr RS, a 34-year-old Army officer sustained a blast injury to his left hand in March 2014 during grenade throwing exercise on field. He presented to us with mangled thumb and index fingers, open fracture dislocation of PIPJ of middle finger. He underwent refashioning of left thumb and index finger at the level of MCPJ and K-Wire insertion over the left middle finger.

RESULTS:

After wound healed and union achieved for the middle finger, we planned for reconstruction of the thumb in stages in order to restore his pincer and opposition function. External fixator with distraction device was applied to the first metacarpal. A total of 2.5cm lengthening was achieved with no complication. However, the lengthened bone was deformed due to the force of webspace contracture after external fixator removal. CT-angiogram showed good arterial blood flow termination at distal 1/3 of first metacarpal bone. Therefore, further digit transplant was not ideal. We opted for first webspace widening and reconstruction to improve his movement of first metacarpal. He was able to wear a thumb prosthesis with adequate webspace and metacarpal length, achieving near normal hand function.

DISCUSSIONS:

Grenade blast injury involve blast wave, blunt injury, penetrating shrapnel and thermal injury. Initial surgery must be done with care to preserve remaining structures. When digit replantation is not possible, other options of reconstruction should be considered.

CONCLUSION:

Although blast injury is rare in our community, one should always understand the mechanism and be stringent in handling such injury. Well-planned and multi-stage surgery assists in increasing the hand function in this type of case.

REFERENCES:

1. Francisco DP et al., Severe Mutilating Injuries to the hand: Guidelines for organizing the chaos. Journal of Plastic, Reconstructive and Aesthetic Surgery (2007) 60 pg 816-827

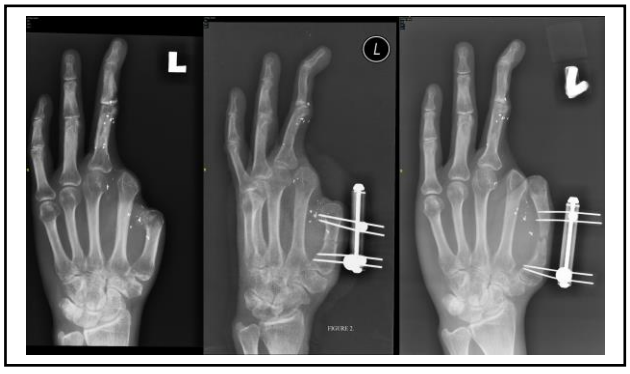

Figure 1: Clinical Images
Figure 2: XRAY Images