A Magnificent Strut! The Marvel of Fibular Strut Graft As Biological Augment

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INTRODUCTION:

Open reduction and internal fixation (ORIF) of proximal humerus are notoriously associated with implant failure, malunion, and osteonecrosis of the humeral head. Hence, augmentation with fibular strut graft is capable of rectifying this issue[1].

REPORT:

We present a case of a 30-years old male with a closed comminuted right surgical neck of humerus fracture and had undergone Proximal Humeral Internal Locking System (PHILOS) with fibular strut graft augmentation in October 2021. He was placed in a beach chair position with C-arm placed parallel to it. A deltopectoral approach incision was used and noted 4 part comminuted right humeral head fracture. Right fibular strut graft measuring 5cm was harvested and placed into the humeral head. Postoperatively, patient was well and discharged with arm-sling. After 3 months, the surgical neck and humeral head fracture had united with no varus collapse. Range of motion of shoulder was acceptable.

Figure 1:Fibular strut graft
Figure 2: Intraoperative radiological imaging

Figure 3: 3 months follow-up x-ray

DISCUSSION:

Studies have shown that ORIF of comminuted proximal humerus (Neer part 3 and 4) are associated with implant failure. Common issues encountered were screw penetration into the joint and varus collapse leading to osteonecrosis of the humeral head. By incorporating fibular strut graft as an augment in proximal humerus fracture fixation, a stable construct can be achieved. It can also initiate early union due to its excellent osteogenic potential[2].

CONCLUSION:

Fibular strut graft is recommended for ORIF of comminuted proximal humerus fracture as it is an excellent biological augment thus preventing implant related failure and non-union of the humeral head.

REFERENCES:

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