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Review Article

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USE OF ULNAR GRAFT IN TREATMENT OF BONE SUBSTANCE LOSS OF THE PHALANX OF THE THUMB

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ABSTRACT

Fractures of the thumb are a pathological entity that must be carefully managed given the royal role it plays in the functions of the hand. We report the case of a 25-year-old patient who suffered from trauma of the thumb, causing loss of bone substance and rupture of the extensor digitorum longus tendon. An ulnar graft was used to fill in the loss of substance, which gave us satisfactory results.

INTRODUCTION

Phalangeal fractures are common fractures in trauma, the 5th finger and the most affected. We present the observation of a young pilot consulting for a fracture with loss of substance of the first phalanx of the thumb with concomitant rupture of the tendon of the long extensor of the thumb.

PATIENTS AND METHODS

Mr B.L, 25 years old, pilot, right-handed, with no particular pathological history who presented to the emergency room for open stab trauma to the P1 of the right thumb. On examination, the patient presents a deep wound in area 2 of the right thumb with bare bone. The patient has a deficit in the extension of P2 to P1 due to the rupture of the extensor digitorum longus tendon. The normal vascular exam. X-ray of the hand shows a P1 fracture with significant loss of substance that will prevent bone healing (Figure 1). Thorough trimming was done. An osteotomy of the upper end of the ulna with use of the graft to fill the void in the fracture, followed by suturing of the extensor longus longus with the Kessler technique, then a X plug-in for stabilization. After a 6 month follow-up, the first phalanx healed well with recovery of the thumb extension. No residual pain at the graft site.

Figure 1: X-ray of the thumb showing the fracture with loss of bone substance.

Figure 2: Open fracture of the thumb with loss of bone substance.

Figure 3: The graft taken from the proximal ulna.

Figure 4: Filling the loss of bone substance with the ulnar graft.

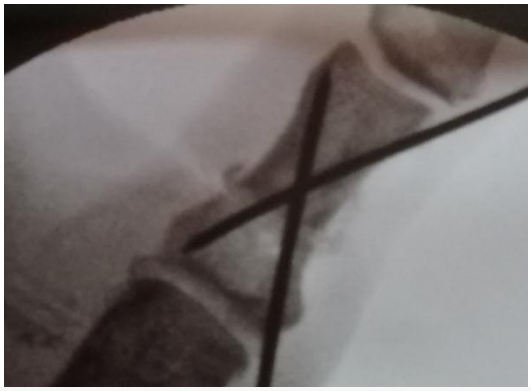

Figure 5: X-ray showing the filling by ulnar graft and pinning in X.

DISCUSSION

A bone graft is a surgical procedure to re-implant a bone fragment to fill a bone void.[1] The proximal ulna is considered to be one of the very good quality grafts for corticospongy delivery, with better results for mandibular grafts. Indeed, this donor site perfectly meets the surgical technical requirements.[2] The ulnar graft also meets the psychological and aesthetic needs of the patient. According to Zhongguo Gushnay, some surgeons believe that autologous bone grafts have quite a few drawbacks, such as increased trauma, prolongation of the operation time, bleeding from the bone area, continued pain, risk of local infection, but most surgeons believe that autologous bone grafting is still the gold standard.[3] Cortical bone grafts have osteoconductive capabilities, with minimal osteoinduction. The latter are most suitable when immediate mechanical stability is required.[4] In our case, the patient was successfully treated with an autologous ulna. Important characteristics should be taken into account when analyzing transplant options. The structure, integrity and osseointegration capacity of the graft. Structural integrity refers to compressive strength and resistance to torsion and shear. The osteo-integrative capacity is the capacity of the graft to integrate itself at the level of the area to be grafted.[5]

CONCLUSION

The ulnar epiphysis presents a very good graft site, thanks to its osteoconductive properties, and to its location on the posterior face of the elbow for aesthetic reasons. We used it to fill in a loss of substance in the thumb. The results were very satisfactory. Conflicts of Interest: The authors declare no conflicts of interest. Acknowledgments: I would like to thank all those who, by their cooperation, their suggestions and their judicious corrections, contributed to the development of this article.

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