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Reconstruction of Loss of Cubital Bone Substance by Non-Vascularized Free Perone Transfer (About a Case)

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Abstract **Case Report**

The non-vascularized free peroné retains an important place to fill an important loss of substance of the forearm. The case of a large bone loss of the cubic is reported in a child who was reconstructed by a non-vascularized 13 cm fibula graft with good graft incorporation.

Keywords: Non-vascularized fibula, bone graft, cubic.

INTRODUCTION

Many causes can lead to more or less significant bone loss: serious trauma, tumors, osteomyelitis .... Free vascularized fibula or not seems to be the most suitable bone to fill these bone loss, because it allows long-term samples, its vascularization is simple, it is a solid cortical bone that allows the realization of montages stable, and the removal of the fibula has no consequences on the donor site. We present the case of a child with ulnar bone loss, filled with non-vascularized free fibula graft

OBSERVATION

This is a six-year-old child from Errachidia, who died on 10-2004 of a trauma to his right forearm that was treated traditionally by (jbira). He comes after 3 months to consult at Errachidia provincial hospital where the diagnosis of osteomyelitis of his right ulna was carried, he was operated at the provincial hospital twice without improvement, then he was sent to C.H.U. of Rabat.

A standard radiograph (FIG. 1) of his forearm was performed and showed a significant loss of cubital bone over the entire ulna and sparing his two proximal and distal epiphyses.

It was decided then to perform a graft of this loss of substance of the right ulna by a non-vascularized free fibula graft. The external pathway at the donor site was chosen. The whole of the peroneal diaphysis (FIG. 3) was taken, about 13 centimeters in length, an internal passageway at the forearm to place and adapt the fibula, the stabilization. was obtained by centromedullary pinning using a single 2 mm pin (FIG 2a). An additional cancellous bone graft at both ends of the fibula was not used, and posterior splint immobilization was completed for one month.

A consolidation was obtained after 10 months (FIG 2b), the patient began rehabilitation sessions well before that date. There has been progressive regrowth of the fibula in the donor site with reconstitution of a new fibula after 3 years (FIG 3b, 3c). Examination of the patient after a 7-year recoil shows a slight stiffness of the right elbow in flexion at 25 °, but the hand-mouth function, the writing function are retained, and the patient is not required additional gestures .

Fig-1: Osteitis of the ulna resulting in destruction of the entire ulnar diaphysis.

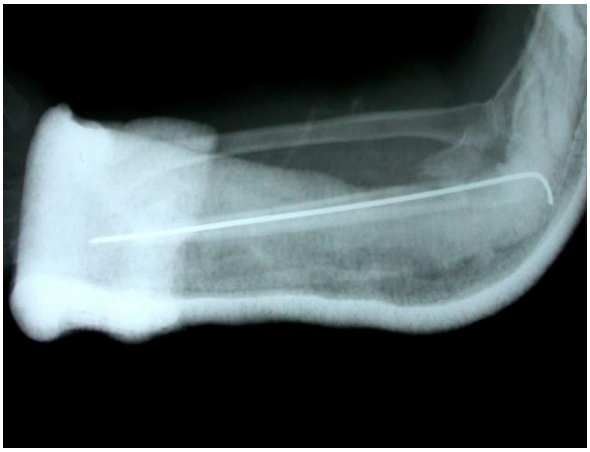

Fig-2: A-cubital graft by free non-vascularized fibula and compression by an axial pin

Fig-2: B- control at 10 months showing the consolidation of the peroneal graft)

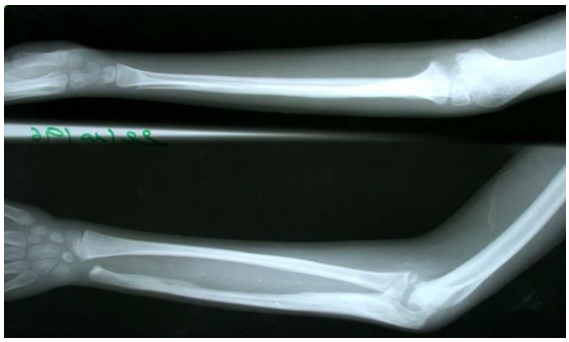

Fig-2: C- control after 18 months: good consolidation

Fig-2: d- control at the age of 14 years

Fig-3: a- Seat of the peroneal graft and start of regrowth

Fig-3: b- control at 18 months

Fig-3: c- control after 3 years

Fig-3: d- contrôle à l'âge de 14 ans

DISCUSSION

According to the MAYO Clinic (1-2), the non-vascularized fibula is a fast technique but the vascularization of the fibula increases the chances of healing and reduces the risk of refracture postoperatively.

The vascularized fibula consolidates more rapidly than the non-vascularized fibula, but requires careful microvascular sutures and longer operative time, and therefore equipment and specialized equipment [1-3].

The chances of healing with non-vascularized free fibula are greater in children than in adults [3]. Non-vascularized free fibula is an alternative for vascular sites (malformation, arterial disease, etc.) with bone loss [3-5]. The stability of the assembly is a capital condition to obtain a correct and fast consolidation [2, 4, 6], us before used the medomedullary racking. The external fixator does not give good stability and may result in stiffness of the sewing, the screwed plate requires a déperiostage, while the intramedullary nailing gives destruction of the centromedullary vessels.

Some authors advocate the use of an autogenous spongy transplant to promote the consolidation of the two exterminated fibula [2, 4, 5, 6]. Reconstruction of the donor site is not systematic in children and unnecessary in adolescents and adults [3,4].

CONCLUSION

The non-vascularized free fibula is an important technique for the reconstruction of bone loss in the forearm, the latest studies have shown a superiority for a vascularized graft however it is thought that certain conditions increase the chances of success of this technique.

- The bone stability must be obtained with certainty.
- The peroneal graft must be attached at both ends

Whenever possible, an associated autologous cancellous graft, placed at both ends and along the peroneal diaphysis, allows faster consolidation.

REFERENCE

1. Bos KE, Besselaar PP, Van Der Eyken JW, Taminiau AH, Verbout AJ. Reconstruction of congenital tibial pseudarthrosis by revascularized fibular transplants. Microsurgery. 1993;14(9):558-62.
2. Wood MB, Cooney WP, Irons GB. Posttraumatic lower extremity reconstruction by vascularized bone graft transfer. Orthopedics. 1984 Feb 1;7(2):255-62.
3. Wolf RE, Scarborough MT, Enneking WF. Long-term followup of patients with autogenous resection arthrodesis of the knee. Clinical orthopaedics and related research. 1999 Jan(358):36-40.
4. El medhi T, substances Zerhouni H, El alami Z, Gourinda H, Miri A. The reconstruction of bone loss by transfer of vascularized fibula (about 4 cases). Rev. Morocco. Chir. Orthop. Traumato. 2002- 14,27-32.
5. Judet H, Gilbert A, Mathoulin C, Judet J, Judet T, Siguier M, Brumpt B. Reconstruction of loss of bony substance in limbs by free vascularized fibula transplant. Chirurgie; memoires de l'Academie de chirurgie. 1991;117(5-6):469-76.
6. Mathoulin C, Gilbert A, Judet H, Judet T, Siguier M, Brumpt B. Free transfer of the vascularized fibula in pseudarthrosis and femoral bone loss. Revue de chirurgie orthopedique et reparatrice de l'appareil moteur. 1993;79(6):492-9.