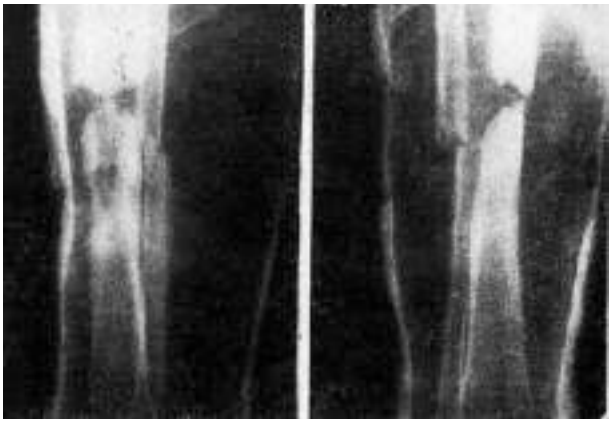

Figure 7. *Case 2. Pre-operative x-rays.*

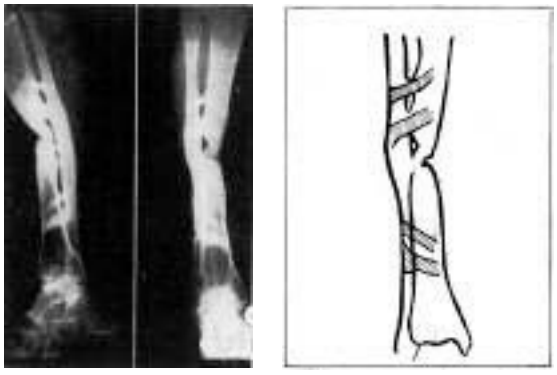

Figure 8A. *Graft healing.*
Figure 8B. *Callus-healing.*

1. Mechanical repose of the fracture site.
2. Revitalizing the bone margins with fresh grafts
3. Being able to operate away from the infected site.
4. Resolving the infection by immobilizing the pseudoarthrosis.

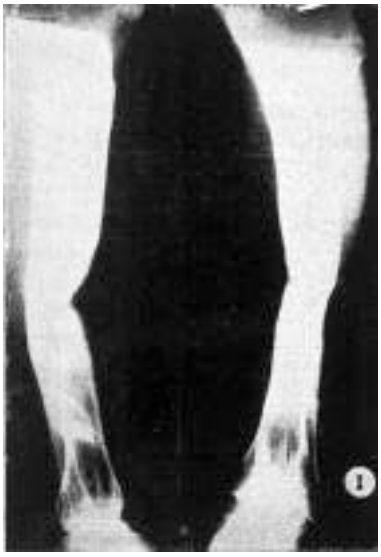

Figure 9. *Healing of the nonunion.*

5. We believe that there is radiographic evidence that healing was successful and the greater development of the fibular shaft has contributed to giving way to a useful, powerful and solid limb.

SUMMARY

We would like to submit that, by means of the suggested method, i.e. the use of multiple tibiofibular grafts, it is possible to treat both the loss of bone stock and infection, since the healing of the grafts makes the limb stronger and mechanical repose favors the resolution of the infection. The main advantage of the method lies in the fact that the procedure is carried out at a distance of the infected area.

Commentary

Treatment of infected pseudoarthroses of the tibia remains a difficult-to-solve problem. Patients where lack of union and infection persist months after the fracture is sustained are as much of a problem today as they were when Dr. Jordá López wrote his paper.

The technique described by the author is based on concepts that are still regarded as Basic principles for treatment: stabilization of the pseudoarthrosis site and addition of a bone graft. According to the technique described, the tibial pseudoarthrosis is bridged using an autologous cortical graft, away from the infected focus and taking advantage of the fact that the fibula is intact. Thus tibiofibular synostosis and stability are achieved.

Currently the standard treatment consists in open surgery to debride the pseudoarthrosis site and thus prepare the bone edges foe Ealing. Intraoperative samples are cultured in order to identify the pathogenous agent so as to be able to administer the most appropriate antibiotic treatment. Immobilization is preferably carried out by means of external fixation. The bone graft will be reserved for use in an

uninfected site and, depending on the size of the defect, bone transport techniques may be useful. In some cases it will be necessary to treat the soft tissue defects with the aid of a plastic surgeon.

It has been shown that the stability of the site is essential for the infection to resolve and, naturally, for the fracture to heal. The improvement of external fixation techniques has made it easier to achieve these goals. The bone grafting technique suggested by the author must be supplemented initially by a long leg cast. When the tibiofibular synostosis has healed, stability tends to be sufficient to obtain a useful limb that is capable of bearing weight, even if the tibial fracture has bot yet healed. Although, as the author says, after the graft has healed and the infection cleared, this biological stimulus, together with the mechanical stimulus of weight-bearing, may in cases where bone loss is minimal lead to the healing of the tibial site.

The addition of a bone graft is essential, mainly when there is bone loss. The use of tibiofibular grafts (grafts harvested from the iliac crest and posterolaterally placed between the tibia and the fibula, away from the infected site) has been described by several authors and is currently a usual technique, albeit without the placement protocol suggested by the author. It is important that the graft should not be in contact with the infected area, since this would favor infection, especially if the graft is cortical.

It is interesting to note that, in spite of the developments that have taken place, there are some principles of treatment that do not change with time and stay current for decades (with the addition in some cases of technical improvements) because their results repeatedly prove them beneficial.

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