Evolution in the treatment of post-traumatic lower limb shortening due to severe bone loss

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Post-traumatic lower limb shortening are challenging to treat and require considerable expertise by the surgeon. The deformities are often associated to axial and rotational deviation, and it is difficult to correct all the aspects of the deformity. Until 2000 the most used technique to achieve the lengthening required, using the distraction osteogenesis, was the ilizarov technique. In the last 2 decades hexapod systems were used to simplify the correction of the ilizarov system, using dedicated software to plan the treatment and to follow the patient during the correction time after surgery, until the complete heal. In the last years with the development of magnetic nail systems, the lengthening of the lower limbs appear to be easier to perform and more tolerated by the patient. The described complication rate using the nail is generally low. They avoid external fixation elements, and are activated transcutaneously, so the patient's pain and discomfort are reduced and the rehabilitation is faster and more effective. Distraction of the nail is brought about by the application of a remote-controller unit containing 2 revolving external magnets. The controller unit is applied externally at the exact location of the nail’s internal magnet. With this new system is possible to achieve a lengthening of 8 cm, in some extreme cases with a severe bone loss (> of 10 cm) this lengthen can be achieved using the same nail, it’s possible to perform a second osteotomy and a new distraction after the complete regeneration of the bone that follow the first osteotomy. In the most severe case treated we obtain a maximum lengthen of 14 cm.

Biography

Bevoni Roberto in Bologna is a surgeon specialized in Orthopedics and Traumatology. With experience and professionalism he deals with foot and ankle pathologies. In addition to the forefoot surgery treated with traditional methods and with minimally invasive methods, Bevoni Roberto is specialized in post-traumatic pathologies of the midfoot and hindfoot, including cases with severe loss of bone substance. The doctor also deals with the treatment of the adult’s flat foot, of the child and the hollow foot. Bevoni Roberto's studio is located in via di Barbiano, one in Bologna.

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