Effective method for treatment of atrophic pseudoarthrosis with leg shortening, associated with chronic osteomyelitis. Clinical case

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Background. Even if nowadays there are described many techniques for treatment of chronic osteomyelitis, pseudarthrosis and defects of the tibial bone, this combination of pathologies till now represents a challenge for orthopedics surgeons. Every surgical techniques, which will allow shortening of the length recovery period and providing bone consolidation, will be recommended.
Aim. to obtain a new technique for treatment of septic pseudarthrosis of the tibial bone with severe leg shortening associated with hematogenous osteomyelitis.
Material and methods. This surgical technique was realized in a 29 years old patient. The patient is considered ill from the 18 months old, when was identified acute hematogenous osteomyelitis localized at the level of proximal epimethaphisis of the left tibial bone, with involvement of the bone growth region. During childhood, the patient supported a few surgical interventions for removal of the septic foci. At 10 years old was performed correction osteotomy of the tibial bone with plate and screws. At adulthood there was detected a shortening of the left leg with 7 cm when comparing with right leg. At 29 years old, the patient supported a tibial osteotomy at the level of distal metaphysis, osteotomy of the fibula at the level of diaphysis. With extra focal fixator bone fragments were distracted 10 mm daily. After 7 days, the extra focal fixator was removed and the tibial bone defect was filled with fibular auto-graft and alo-ransplantation, fixation with plate and k-wires. Four months after surgery there was detected degradation of the material of osteosynthesis. Re-osteosynthesis was performed with plate. After 6 months clinical evolution was complicated with septic process and again there was detected degradation of material of osteosynthesis. The treatment used by us comprises removal of material of osteosynthesis, removal of grafts, sanitation of septic foci, adaptation of bone fragments and fixation with extra focal Ilizarov device. After 3 weeks at the level of the bone defects were introduced stem cells, which were harvested from posterior-superior spina iliaca. After this, daily bone fragments distraction was performed with 0,5 mm. During a period of 4 months after this procedure, the left leg was 65 mm longer. Percutaneously, in the region of regenerate there was injected a second dose of stem cells harvested from posterior-superior spina iliaca. Bone consolidation was confirmed after 9 months.
Results. Using this technique of treatment there was obtained an elongation of the left leg with 65 mm. Total period of lengthening and bone consolidation was 14 months.
Conclusion. The method of bone distraction associated with injection of stem cells is an effective method for obtaining bone elongation in condition of osteosclerosis and vascular disorders at the level of bone fragments subjected to distraction.
Keywords. stem cells, leg shortening, acute osteomyelitis.

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