Arthrodesis is used to treat arthritis, deformity, instability, or pain in the ankle and hindfoot. Although this procedure is the most commonly used technique to treat end-stage ankle arthritis, reported success rates vary widely. One bone grafting option for arthrodesis is autograft. Autograft bone can provide the osteoconductive, osteoinductive and osteogenic properties needed for successful bone fusion; however, the retrieval of the autograft can cause pain and site-morbidity to patients. ViviGen provides all three of these properties using viable lineage-committed bone cells. ViviGen contains viable cortico-cancellous bone matrix, cortico-cancellous chips, and demineralized bone and preclinical studies have suggested bone cells might improve fusion over mesenchymal stem cells by providing better bone deposition while remaining in the defect site longer.

The following describes the use of ViviGen to treat a challenging ankle deformity case.

**Patient**
- A 23 year old obese, Open Reduction Internal Fixation of distal tibial fracture, female patient
- Complained of deformity, pain, and osteoarthritis in right ankle that had been present for six years
- Failed conservative treatments include bracing, physical therapy, orthrosis, and a rocker shoe

**Procedure**
- Arthrodesis was undertaken to correct a varus deformity (Figs. 1&2)
- Full thickness cartilage loss was observed
- 5 cc of ViviGen was used

**Results**
- Fusion was achieved by eight weeks
- Preoperative moderate to severe pain decreased to no pain postoperatively
- Patient was full weight bearing at six weeks with a boot and discontinued boot use at eight weeks

**Conclusion**
- Patient was “very happy” and no complications were observed
- Arthrodesis using ViviGen was successful at inducing fusion within eight weeks (Figs. 3&4)

Ankle and Hindfoot Arthrodesis Using ViviGen® Cellular Bone Matrix

Fig. 1 AP Preoperative

Fig. 2 Lateral Preoperative

Fig. 3 AP Postoperative
At 8 Weeks Post Op

Fig. 4 Lateral Postoperative
At 8 Weeks Post Op

Results from case studies are not predictive of results in other cases. Results in other cases may vary.

LifeNet Health helps to save lives, restore health and give hope to thousands of patients each year. We are the world’s most trusted provider of transplant solutions, from organ procurement to new innovations in bio-implant technologies and cellular therapies—a leader in the field of regenerative medicine, while always honoring the donors and healthcare professionals that allow the healing process.

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