Operative treatment of large talus cysts and tibiotalocalcaneal arthrosis can be challenging, especially when there is known underlying medical conditions that may cause progressive post-operative wound and bone healing. Total-knee treatment consists of debridement of the cyst and removal of any calcific deposits, followed by filling the defect with bone grafting material. This case is performed with an endoscopic, arthroscopic or open approach. While open approach may allow better visualization, it is exposure to more surgical trauma and vascular compromise.

For surgical treatment of tibiotalocalcaneal (TTC) joint post-traumatic arthritis, the options include, but not limited to, focal osteoarthritis of talus and subtalar joint arthroplasty with subtalar joint arthrodesis.

This report is on a patient with a large talus cyst and arthrosis in both ankle and subtalar joints. He also presented idiopathic, lateral superficial peroneal neuropathy, which we considered a major risk factor for post-operative complications. While the standard approach for TTC arthroplasty avoids the area of superficial peroneal nerve innervation, we felt that bone healing in this patient would be difficult, especially when large talus cysts were treated at the same time.

Sensory neuropathy is one of the strongest risk factors associated with bone and wound healing complications. This is a major concern for surgeons. Due to this, we chose to perform arthroscopic subtalar joint first stage.

In the first stage, we performed arthroscopic subtalar joint fusion with treatment of the talus cyst with an expandable reamer and a bone filler. Once we determined that the bone healing was not severely affected by this neuropathy, we treated the ankle arthrosis with a laterally approached total ankle replacement system in the second stage.

Results Continued

Case Study

A 68-year-old veteran who sustained traumatic event military, which was never surgically treated had right ankle pain for over 20 years. Multiple neglected traumatic events resulted in malunion of the talus with large intraarticular cysts, which were communicating with both ankle and subtalar joints. (Figure 1). The patient had difficulty performing activities of daily living due to pain. His goal was to return to his motorcycle and recreational activities.

The ankle and subtalar joint pain was severe, and he had difficulty tolerating the pain during walking, running, and range of motion. There was marked deformity at the ankle, with mild valgus of the knee, even though normal ligaments were intact. The patient had severe lower extremity pain associated with these abnormalities.

At follow-up, there were no significant events except for an anterior superficial wound created from pressure on the surgical bandage. The wound was treated with local care. The numbness of the foot was improved. The patient refused to be followed up.

Discussion

In the current case, the patient had impaired fasting glucose without diagnosis of diabetes, yet he had diaphyseal lateral superficial peroneal neuropathy, evidenced by the clinical examination and nerve biopsy. He had normal sensation on the lateral, medial, and posterior aspect of the ankle. Geography, planned nerve-mapping tests in areas reserving the anterior ankle. To minimize operative trauma, we decided to stage procedures with a minimal incision approach in the first stage. Our plan was to proceed with massive second stage healing noted to be adequate in the first stage.

For second stage, we utilized an expandable reamer. Scheibenlehter described two cases of large talus cysts treated successfully with 2-proto tendon surgery for direct visualization and access for debridement and grafting. Ogil reported a small series of patients with talus cysts treated with arthroscopic debridement and grafting, and they found an improvement in AOFAS scores at final follow-up. For this, we used an expandable reamer to allow maximum debridement of the cyst bone while maintaining a minimal surgical incision. This necrotic tissue is removed via irrigation cannula.

Discussion

The system utilized calcified expanded intraluminal by turning the adjustable mechanism.

The patient was 19.5 mm in diameter and can be expanded from 9 to 20 mm in diameter in the bone (Figure 10).

In this regard, knowledge of several surgical techniques for treating large talus cysts has been described utilizing an expandable reamer. The void created from the joining was filled with a synthetic graft. The graft we utilized was a fully synthetic bone graft substitute made up of calcium sulfate, which is also used for bone grafting. The Zimmerman Triarc Total Ankle Replacement System is currently the only system that allows the surgeon to correct the soft tissue with a lateral arthroscopic approach.

In this case, a patient with a large talus cyst and arthrosis in both ankle and subtalar joints was treated with an expandable reamer and a bone filler. A talus arthrosis with posterior superficial arthrosis, and treatment of ankle arthrosis with the lateral approach total ankle replacement system was a viable option.

References

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