Case Presentation & Method

A 54 y/o NIDDM male presented to the Bennerat Foot & Ankle Care Center seeking a second opinion for diffuse, aching and shooting pain of 3 years duration to the medial and lateral sides of the right ankle, as well as the heel. Pt stated his pain to be 9-10. Pt narrates to numerous unsuccessful conservative attempts by a previous Foot & Ankle Surgeon to alleviate his left ankle joint pain. According to the Pt, conservative treatment over a 3 year period consisted of custom-molded orthotics such as Archfoot Foot Orthoses (AFOs) and a Swedo bra, intra articular steroid injections, NSAIDs and a removable walking boot. He, however, admits to successful fusion of his rearfoot joints by the same Surgeon. Past medical history is significant for osteoarthritis of the knees, hips, shoulders, wrists and ankles, leg cramps and hyperlipidemia. Pt relays that he has been surgically managed by arthrodesis. Ankle replacement is an alternative to arthrodesis for selected patients, with the advantage being the preservation of movement and function. In this case we have seen improvements in gait including reduction of limp and protection of other joints. A-4

Primary osteoarthritis is less common in the ankle when compared to knee and hip joints, but arthritis secondary to trauma occurs frequently. A Non-operative management includes analgesics and anti-inflammatory medications, activity modification, physiotherapy, orthotics, and intra-articular injections. Traditionally, end stage arthrosis of the ankle joint has been surgically managed by arthrodesis. Arthroplasty is an alternative to arthrodesis for selected patients, with the advantage being the preservation of movement and function. In this case we have seen improvements in gait including reduction of limp and protection of other joints. A-4

Total ankle arthroplasty does not come without its complications; infections and loosening can produce failure. Contraindications for ankle arthroplasty include acute and chronic foot infections, ankylosis, severe Charcot arthropathy, and septic arthritis.

Analysis & Discussion

The patients pain went from a 12/10 pre-operatively, to a 3/10 post-operatively and an intermittent 1/10 4 months postoperatively. The patient was able to regain most of his motion.

Radiographically, the tibial component was stable and the talar component showed no loosening. Increased motion was also noted both in dorsiflexion and plantarflexion as compared to preoperative radiographs.

The patient was able to resume his professional bowling career and recreational golfing. His return to activity was sooner than expected as it took 1 month postoperatively. The patient is now completely satisfied and pleasantly surprised at the activity level that he has been able to attain.

The Thompson-Richard prosthesis (TPR) was a two component semi-constrained system which allowed only plantar-dorsiflexion. This caused shear forces to only be transmitted to the bone cement interface and thus a high rate of radiolucency on radiographic evaluation. A-5

Modern implants consist of metallic tibial and talar components with or without talar shell, and a tibia and talar shell-like polyethylene component that is either fixed to the tibial component or mobile articulating with both. In this case the INBONE (Wright Medical) replacement system was used in order to revert a painful previous triple arthrodesis. We used this implant with the hope of regaining motion to a once pain free joint. The advantage of the INBONE system over a pure arthroplasty system was as follows: First, both the tibial and talar components are well supported by stems of the tibial component. Secondly, vertical fixation allows for a less bone removal of the tibia and leaves the fibula intact and most of the medial malleolus. Third, the talar component matches the natural anatomy of the talus. The poly is not just tightly poly, and creates a natural and stable ankle motion. Fourth, the polyethylene has been thickened and the surface area maximized to lessen wear. Fifth, a fixed bearing system is better suited for the ankle especially if an accurate method is used to implant the total ankle. And finally an intramedullary guidance system has been developed for this ankle system to help insure reproducible and accurate bony cuts for proper alignment of the prosthesis. A-6

In conclusion, the INBONE total ankle implant is a viable option for patients that are candidates for an ankle arthrodesis but want to keep their range of motion and continue a lifestyle which requires unhindered motion. At some point extension of the indications to a younger age group with a more active lifestyle, and to ankle deformities remains the outlook for the future.