Early Outcomes on the Use of an Anterior Plate for complicated Ankle Fusions

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Introduction/Purpose: An ankle fusion is indicated for severe osteoarthritis of the ankle. An anterior ankle fusion plate for tibiotalar fusions provides a rigid and reproducible solution to treat ankle arthritis. With a plate fixation it might be possible to treat more complex deformities and provide additional stability in compromised patients.
This study documents the early outcomes on the use of an anterior plate for patients undergoing an ankle arthrodesis.

Methods: All ankle fusions using the anterior plate at our center were included and followed. Fifty-one patients (53 ankles) presented to the senior author between September 2014 and February 2017. Patients experienced ongoing ankle pain due to degenerative changes, a previous ankle fusion, post-traumatic arthritis (PTA) or failure of a total ankle arthroplasty (TAA). All patients' medical and ankle surgical history was documented. This study was conducted in compliance and approved with a local IRB. Outcomes were evaluated pre-operatively and post-operatively with the Veterans Rand Health Survey (VR-12), Ankle Osteoarthritis Scale (AOS) and Visual Analog Scale (VAS) Pain scale. A patient satisfaction survey was distributed to all patients and results were tabulated. Average follow up for outcome scores 16.8 months (range 6 – 38 months).

Results: Fifty-one patients(29 females) with the mean age of 56.56 years(26.3–74.8) had a mean follow-up of 16.6months(6–38months). Diagnoses included 17 primary, 10 revision, 6 TAA failures and 20 PTA. 86.3%(44 patients) were non-diabetic. Non-smokers included 43.1%(22). VR-12 Physical improved from 29.46 to 37.72, and Mental 47.34 to 52.55 pre-operatively to post-operatively, respectively. AOS Pain improved: 462.41 to 252.8; AOS Disability: 567.52 to latest 387.77. Mean VAS improved from pre-operatively of 54.28 to latest of 30.61.
Arthrodesis rate was 98%(52/53 ankles). 45 ankles were fused at 3 months by x-rays. Symptomatic patients (with pain) had a CT scan done at a minimum of 3 months (1/8 CT scans showed non-union & 7 were fused).
Major complications were 3.8%(2 patients). There were no wound complications.

Conclusion: An anterior plate construct is more invasive compared to arthroscopic or other arthrodesis options. However, the stability of the construct allows for a reliable option in complex situations, and the arthrodesis rate appears to be exceptional. In this complex patient population, the arthrodesis rate was 98%, while major complications only 4%.
Summary Sentence:
Anterior plate construct is more invasive compared to arthroscopic/other arthrodesis options. However, stability of the construct allows for a reliable option and fusion rates seem to be exceptional.

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