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ABSTRACT TITLE: Ankle Arthrodesis within the Active Duty Population

INSTITUTION WHERE THE STUDY/PROCEDURE TOOK PLACE: Tripler Army Medical Center, Honolulu HI

INTRODUCTION

Ankle and foot injuries are a major cause of Active Duty (AD) service members' time lost from training and combat operations. Unlike the hip or knee, the leading cause of ankle arthritis is post-traumatic; with tibiotalar arthrodesis serving as the traditional treatment in the setting end-stage arthritis. To date, ankle arthrodesis outcomes within the military have not been reviewed. Therefore, it is of great interest to evaluate the outcomes of ankle arthrodesis and the ability for the service member to return to duty following arthrodesis for end-stage ankle arthrodesis.

METHODS

A retrospective review of radiographic and clinical data was completed on consecutive AD patients with diagnosis of tibiotalar arthrodesis from January 2008-2018 to determine pre- and post-operative changes in pain and function and ability to maintain active duty status.

RESULTS

Twelve AD military patients were identified using CPT codes. One patient was excluded due to undergoing a bilateral below the knee amputation within one year of ankle arthrodesis due to severe neuropathic foot pain following a blast injury. Eleven patients were included, 10 males and 1 female with an average age of 38.4 years (range, 29-46). The majority of patients were senior enlisted (8), while two were officers and one junior enlisted. Six underwent open fusions, and 5 underwent an arthroscopic fusion with one arthroscopic and one open patient requiring an open revision at 17 and 20 months respectively for arthrodesis nonunion. Average surgical time was 205 minutes arthroscopic group and 226 minutes for the open group ($P= 0.5$). There were no recorded surgical site infections, wound complications or deep vein thrombosis. At one year, the VAS pain score decreased from an average of 4.67 preoperatively to 3.42 ($P= 0.03$). This downward trend continued with an average VAS pain score of 2.8 at two years ($P= 0.02$). Regarding military retention, eight patients (73%) were on AD with a P2 profile for an alternative run event at one year follow-up. At two years, three patients (27%) had underwent a medical evaluation board, three patients completed their service obligation and separated (27%), three patients remained on AD until retirement (27%) and two currently still serve on AD

(18%). Only one patient was able to return to full AD without a profile within one year. Average time from surgery until military separation was 18 months.

DISCUSSION and CONCLUSION

Post-traumatic ankle arthritis has a high prevalence within the military population, but to our knowledge, the present series represents the first review of ankle arthrodesis within the active military population. This study highlights the clinical course for service members with end-stage ankle arthritis. At one year follow-up, 73% remained on AD with a medical profile. Although patients had a significant relief of pain, the majority of patients separated from the military within 18 months of their operation. This finding is likely confounded by the fact that most patients were senior enlisted non-commissioned officers within 2 years of their retirement date. Only three patients required medical evaluation board for their ankle following surgery (27%). Overall, with this data, we can provide insight into the medical accession and retention standards for military personnel. A arthrodesis improves VAS pain scores, and can be compatible with military service.