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Comparative Outcomes of Total Ankle Arthroplasty versus Ankle Arthrodesis: A Longitudinal Study

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Abstract

Objective:

Background: End-stage ankle arthritis signiýcantly impairs quality of life and mobility, necessitating surgical intervention to alleviate pain and restore function. TAA and ankle arthrodesis are established surgical options, each

degeneration, while ankle arthrodesis provides reliable pain relief and stability by fusing the joint.

Methods:

Results: Preliminary ýndings indicate that both TAA and ankle arthrodesis e ectively reduce pain and improve

potentially reducing stress on adjacent joints, whereas ankle arthrodesis o ers greater reliability in achieving pain relief and joint stability. Complication rates vary between the two procedures, with TAA associated with higher risks of

Conclusion: This longitudinal study pro ' follow-up studies are essential to further elucidate the durability, fu
proýles of these surgical options.

Keywords: Total ankle arthroplasty; Ankle arthrodesis; Ankle arthritis; Comparative outcomes; Longitudinal study

Introduction

End-stage ankle arthritis poses signi cant challenges to patients, impairing mobility, causing debilitating pain, and impacting overall quality of life. Surgical interventions are o en necessary to alleviate symptoms and restore function, with total ankle arthroplasty (TAA) and ankle arthrodesis (fusion) emerging as primary treatment options. Each procedure o ers distinct advantages and considerations, prompting ongoing debate among orthopedic surgeons regarding the optimal approach for individual patients. Total ankle arthroplasty involves the replacement of the arthritic joint with a prosthetic implant, aiming to preserve ankle motion and potentially reduce stress on adjacent joints.

is approach has gained popularity due to its potential to maintain or improve joint function and mobility, thereby potentially delaying the onset of adjacent joint arthritis. However, concerns exist regarding the longevity of implants and the risk of complications such as loosening, infection, and implant wear [1].

In contrast, ankle arthrodesis achieves pain relief and stability by fusing the ankle joint, eliminating joint motion. is procedure has been historically favoured for its reliable pain relief and durability, o en resulting in high rates of patient satisfaction. Despite its e cacy in pain relief, ankle fusion limits ankle motion and can lead to altered gait mechanics and potential stress on adjacent joints, which may predispose to arthritis in neighbouring joints over time. e choice between TAA and ankle arthrodesis is in uenced by various factors, including patient age, activity level, bone quality, and surgeon experience. While

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Total ankle arthroplasty involves the replacement of the diseased ankle joint with a prosthetic implant, designed to replicate the native joint mechanics and preserve motion. is approach holds appeal for its potential to maintain or improve ankle function, restore mobility, and potentially delay the onset of adjacent joint arthritis. However, concerns exist regarding implant durability, long-term outcomes, and the risk of complications such as implant wear, loosening, and infection [3].

e choice between TAA and ankle arthrodesis is multifaceted and

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