

Title:

A Retrospective Chart Review to Determine Lateral Ankle Instability Treatment based off of the Degree of Varus Tilt

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Conflict(s) of Interest:

The authors declare there is no conflict of interest.

Introduction:

One of the most common injuries in the United States is the ankle sprain, accounting for 10-15% of sport injuries.¹ Without proper treatment, about one-third of patients reinjure the same ankle and can progress to chronic lateral ankle instability.² An ankle can be clinically evaluated by performing an inversion stress test and measuring the degree of varus tilt. This information can help to evaluate the stability of the ankle and help decide what type of treatment is necessary. The purpose of this retrospective chart review was to assess whether there is preliminary evidence to suggest that the degree of varus tilt is associated with whether a patient with chronic lateral ankle instability advances to surgery following initial conservative treatment. Additionally, this chart review aims to confirm the validity of the guidelines of an abnormal talar tilt value, which is said to be a value greater than 10 degrees.³

Methods:

A total of 584 patients between January 1st, 2016 and June 27th, 2019 were clinically diagnosed with lateral ankle instability and had an inversion stress x-ray. All 584 patients were seen and diagnosed by the same foot and ankle orthopedic surgeon in Columbus, Ohio. Of the 584 patients, 40 had bilateral lateral ankle instability and bilateral stress xrays, given a total of 624 ankles originally included in this chart review. Once the patient's charts were reviewed, 32 ankles were excluded because their ankle surgery did not involve correction of the lateral ankle instability. A total of 592 ankles (293 left and 299 right) were included in this review. The degree of varus tilt on all 592 ankles were determined by measuring the angle between the tibial plafond and the top of the talus.⁴ All patients initially went through conservative treatment, which included bracing, booting, physical therapy, orthotics, shoe changes, injection, and/or casting. The varus angles were compared between the patients who did and did not advance to surgery following initial conservative treatment.

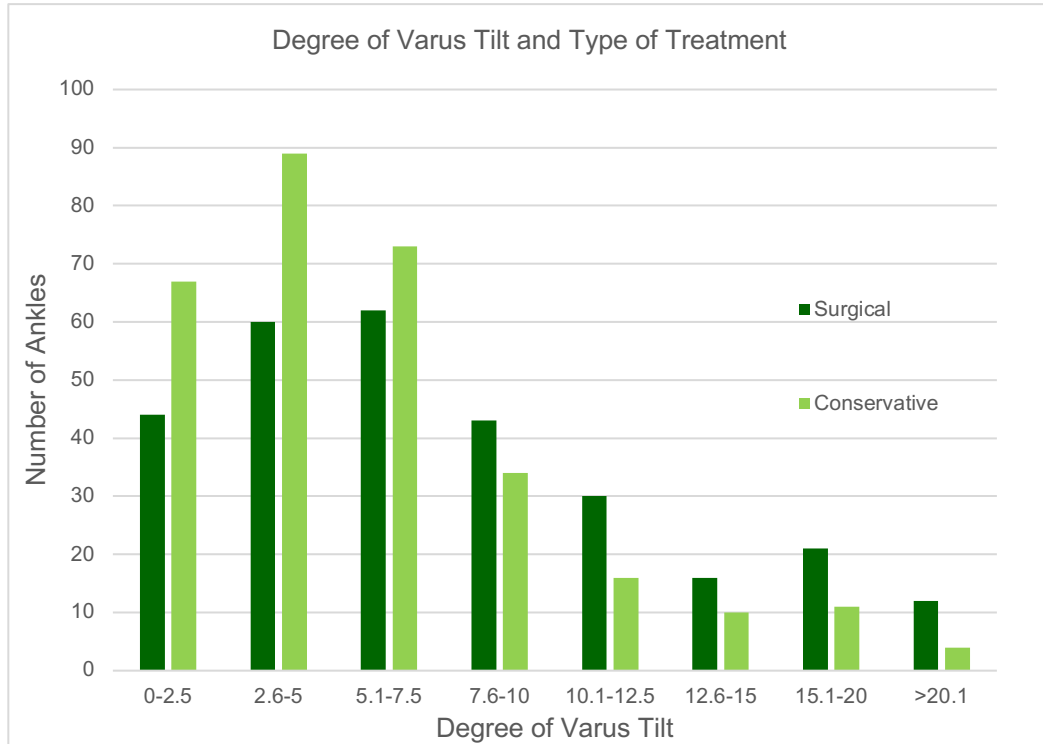
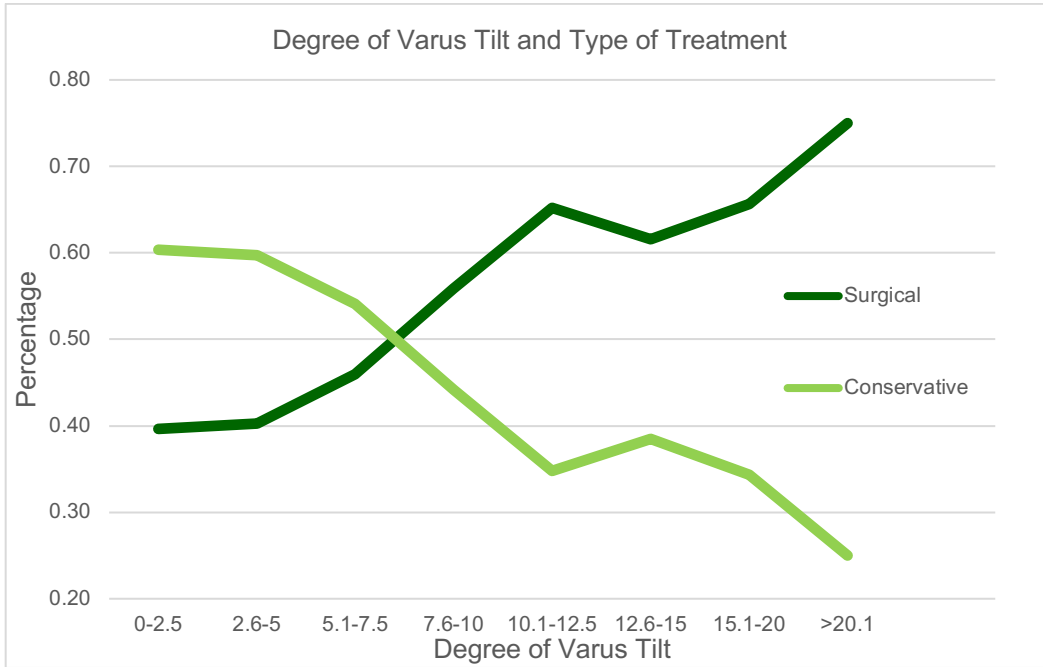
Results:

Patients who had a varus tilt less than 2.5 degrees advanced to surgery 40% of the time. Conversely, those who had a varus tilt greater than 20.1 degrees advanced to surgery 75% of the time. Further analysis indicated that 44% of patients who had a varus tilt of less than 10 degrees (209 of 472 ankles) still required surgical treatment.

Discussion:

This study suggests that as the degree of varus tilt increases, the more likely the patient is to advance to surgery. Additionally, these data suggest that many patients require surgical correction even with relatively moderate varus tilt, which raises the question of what value should be considered representative of an abnormal talar tilt. One possible explanation of our findings is that the inversion stress test does not evaluate the subtalar joint, which can contribute to chronic lateral ankle instability.

Graphs:



References:

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