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

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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] 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.

Measuring the Varus Tilt

In order to measure the degree of varus tilt, a manual inversion stress radiograph is performed in the mortise view with the foot placed into 10-20° of plantarflexion. The degree of tilt on all ankles were determined by measuring the angle between the tibial plafond and the top of the talus (Figure 1).[4]

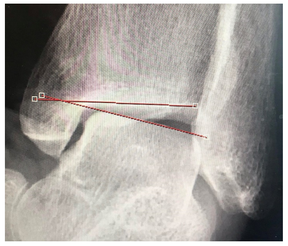

Figure 1. Measuring the degree of varus tilt

Methods

This retrospective chart review included a total of 592 ankles that were clinically diagnosed with lateral ankle instability by the same foot and ankle surgeon and had an inversion stress x-ray. The degree of varus tilt was measured on all 592 ankles and the angles were compared to the patients with surgical and conservative treatment. This chart review has IRB approval.

Results

- 304 ankles treated conservatively, and 288 ankles treated surgically.
- 99.2% of patients failed conservative treatment prior to surgery.
- This retrospective chart review showed that as the degree of varus tilt increases, the more likely the patient will need to be treated surgically to correct their lateral ankle instability.
- A total 209 ankles that had a varus tilt of less than 10° were treated surgically.

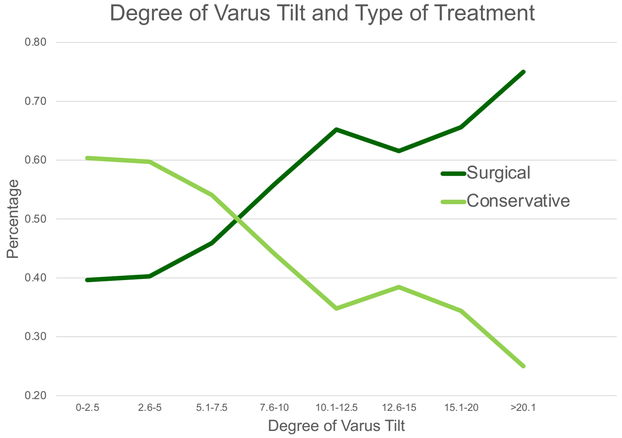

Figure 2. The percentage of ankles treated surgically or conservatively and varus tilt

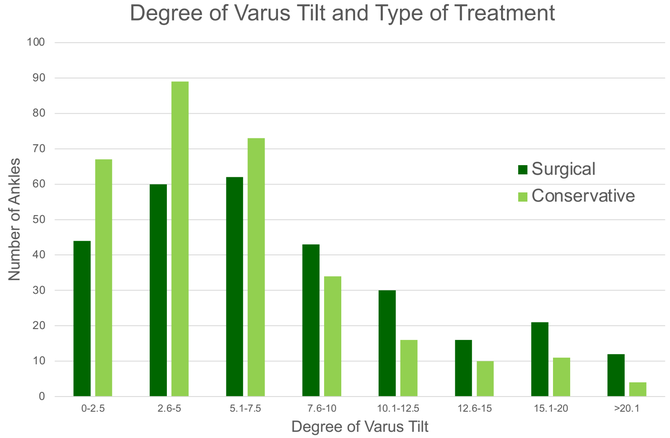

Figure 3. The number of ankles treated surgically or conservatively and varus tilt

Conclusion

Based off of the data, it is clear that patients with a higher degree of varus tilt have more ankle instability and are more likely to fail conservative treatment and require surgical correction. Additionally, this chart review showed that many patients needed surgical correction even with a small varus tilt value on stress x-ray. Further evaluation needs to be completed to determine what value is considered an abnormal varus tilt.

Limitations

- Stress radiographs were taken at several locations; different forces of stress could have been applied.
- Several patients may be currently undergoing conservative treatment and still may need surgical correction.
- Several patients had bilateral ankle instability and only one ankle is being treated at a time.

References

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