Revisiting the Prevalence of Associated Co-Pathologies in Chronic Lateral Ankle Instability

Ibukunoluwa Araoye, MS, Cesar de Cesar Netto, MD, PhD, Brent Cone, BS, Parke Hudson, BS, Bahman Sahranavard, MD, Zachariah Pinter, BS, Caleb Jones, BS, Sung Lee, BS, Shelby Bergstresser, BS, Ashish Shah, MD

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Introduction/Purpose: Ankle sprains are the most common athletic injury with an estimated 30% risk of developing chronic lateral ankle instability. Up to 20% of these patients will require surgical management after trial of conservative treatment for chronic disease. Current literature suggests that the presence and type of co-pathologies associated with chronic lateral ankle instability can serve as important predictors of surgical outcomes. As the occurrence of these co-pathologies varies in the literature, providers may underestimate their presence which may lead to suboptimal surgical approach. The purpose of this study is to re-examine the prevalence of common associated lesions in patients who underwent surgical treatment for chronic lateral ankle instability.

Methods: We retrospectively reviewed medical charts for 389 cases of lateral ankle instability repair surgery at our institution between June 2006 and November 2016. All patients had undergone at least 6 months of conservative therapy such as ankle stabilizing orthosis or physical therapy with no improvement. All operations were performed by senior orthopaedic surgeons. Exclusion criteria included age less than 18 at time of surgery, gross traumatic event, and history of ipsilateral subtalar arthrodesis. Demographic information such as age, gender, body mass index, and race/ethnicity were collected. 166 surgical notes accessible through the electronic medical record were reviewed for specific intra-operative findings including presence of peroneal pathology (including tendon split lesion), talar osteochondral defects, anterior or posterior ankle impingement, low lying muscle belly of the peroneus brevis and surgical approach. Simple descriptive statistics were used to examine means and frequencies of the collected data.

Results: 166 cases (48 males, 118 females) were included (mean age = 39 ± 13.4 years, mean body mass index = 31.41 ± 7.5 kg/m², mean follow-up = 44 ± 46 weeks). 95 cases involved the left foot while 71 cases involved the right foot. Two senior surgeons accounted for 87% (145/166) of the cases. 20 cases were revisions. 72.3% (120/166) of all cases had associated peroneal pathology (36.6% (44/120) peroneus brevis split lesion and 5.8% (7/120) with peroneus longus split lesion). 41% (69/166) of the patients had ankle impingement (anterior = 32; posterior = 19. combined = 17), 37% (62/166) had a low lying muscle belly of the peroneus brevis and 19% (32/166) had osteochondral lesions of the talus.

Conclusion: Surgical approach and long-term outcomes can be affected by the knowledge and proper diagnosis of chronic lateral ankle instability associated lesions. Our study reinforces the need for vigilant exploration of chronic ankle instability patients who require surgical treatment. More specifically, surgical exploration for peroneal pathology and ankle impingement may be crucial as our findings reveal a high intraoperative rate of their occurrence. While the role of a low-lying peroneus brevis muscle belly in the development or course of chronic lateral ankle instability remains to be elucidated, we report a significant percentage of its occurrence.

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