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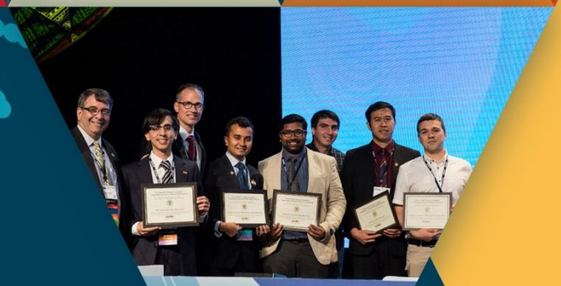
Are patients with chronic lateral ankle instability (CLAI) are more functionally impaired compared to those with symptomatic single lateral ankle sprain?



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Faculty Disclosure Information

- Nothing to disclose

Study Background

- Lateral ankle sprains are one of the commonest musculoskeletal injuries[1,2]
- It is not as innocuous as thought to be as it has substantial morbidity such as increased risk of reinjury, development of chronic lateral ankle instability (CLAI) and post-traumatic osteoarthritis[3,4]
- Patients with CLAI have been correlated with other associated ankle injuries and poorer outcomes[5,6]

Study Aims

- To review the prevalence and characteristics of patients with and without CLAI in a cohort of patients treated surgically for symptomatic lateral ankle instability

Materials and Methods

- Retrospective review of a series of a patients that were surgically treated for symptomatic lateral ankle instability between January 2017 and December 2022 in National University Hospital, Singapore
- Inclusion criteria
  - Sustained symptomatic lateral ankle instability and were treated surgically
  - Skeletally mature > 18 years old
  - Had preoperative MRI scan done
- Exclusion criteria
  - Incomplete medical records
  - Lateral ankle instability managed conservatively/ Patients who underwent simultaneous surgical fixation of ankle fractures/ prior surgical fixation
  - Associated infection/ oncological history

Materials and Methods

- Data collected
  - Patient demographics
  - Presence of CLAI
  - Nature of surgical procedure
  - MRI imaging and report
    - Lateral ligamentous injuries
    - Other associated injuries (e.g. deltoid/ syndesmosis/ peroneal/ occult fractures)
  - Pre and post operative functional scores (3 months, 6 months, 1 year)
    - AOFAS score
    - SF-36 PCS and MCS scores
- Statistical analysis
  - SPSS version v26
  - Pearson Chi Square test for categorical variables and Student T-test for continuous variables

Results

Demographics

Parameters	Patient data, n = 231
Age, mean ± SD	30 (±11.2)
Male (%)	168 (72.7%)
Body Mass Index, mean ± SD	26.2 (±5)
Presence of CLAI	170 (73.6%)
Associated injuries	
Osteochondral lesion (%)	60 (26%)
Deltoid ligament (%)	92 (39.8%)
Peroneal tendon (%)	58 (25.1%)
Syndesmosis (%)	33 (14.3%)
Fibula tip avulsion fracture (%)	35 (15.2%)

Table 1: Patient demographics and associated injuries noted on MRI

231 patients were treated surgically for symptomatic lateral ankle instability

170 (73.6%) had CLAI

Results

Demographics

- Prevalence of patients with CLAI was 73.6% (170 patients)
- Patients with CLAI were significantly younger than those without (28.9 vs 33 years, p = 0.006) although they were not significantly different in terms of gender, BMI and associated injuries

Results

Outcomes

	Patients with CLAI (n = 170)	Patients with single sprains (n = 61)	P Value (<0.05)
Preop AOFAS score	57.2	64.9	0.039
Post op 1 year AOFAS score	87.0	90.0	0.783
Preop SF-36 Physical Component Score (PCS)	41.7	45.4	0.032
Post op 1 year SF-36 PCS Score	54.1	53.4	0.714

Table 2: Pre and 1 year post operative AOFAS and SF-36 PCS scores comparing patients with and without CLAI

Patients with CLAI had significantly poorer preop AOFAS and SF-36 PCS scores but post operative scores were not significant at 1 year post op

Discussion

1. **More than two thirds of patients** (73.6%) with symptomatic lateral ankle instability had chronic lateral ankle instability
    - This is consistent with published literature that a history of lateral ankle sprains is one of the strongest risk factors for a future ankle sprain and subsequent development of chronic ankle instability, where up to 70% of individuals who sustain an acute lateral ankle sprain may develop CLAI[7]

2. Patients with CLAI **were significantly younger** than those with single sprains although they were not significantly different in terms of gender, BMI and associated injuries
    - Consistent with literature where younger age is an independent predictor of recurrent ankle sprains. Younger patients appear to be more susceptible to CLAI possibly because of their higher levels of activity[7,8]

Discussion

3. Patients with **CLAI initially presented with significantly poorer preoperative scores** at presentation when compared to those with single sprains. However**, functional scores showed improvement and equalized at 1 year after surgical stabilization**
    - This suggests that surgical stabilization for symptomatic lateral ankle instability yield good outcomes for both patients with CLAI and those with single sprains

Discussion

- Limitations
  - Retrospective design
  - Single center
  - Post op and rehabilitation protocol may differ between different surgeons
- Strengths
  - Relatively large number of patients
  - Use of patient reported outcome scores

Conclusion

Patients with CLAI have statistically significantly **poorer preoperative outcome scores**

Despite that, post operative AOFAS and SF-36 PCS scores were **not significant 1 year post op**, indicating that **surgical intervention benefits those with and without CLAI**

These findings support the **need to develop a patient-centric care strategy** to improve post op outcomes in patients with CLAI

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