# Poster #: Outcomes of Chronic Exertional Compartment Syndrome of the Leg at a Six-Year Mean Follow-Up

**Authors:** Michael Moore BA, Bradley Lezak MD, Jairo Triana BS, Michael Buldo-Licciardi BS, Andrew Hughes MD, Julian Seidenberg, Daniel Kaplan MD, Eric Strauss MD, Laith Jazrawi MD

Institution: Division of Sports Medicine, Department of Orthopedic Surgery, NYU Langone Health, New York, NY

# Disclosures:

**Eric Jason Strauss, MD, FAAOS**

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Laith M Jazrawi, MD, FAAOS (New York, NY)

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# Outcomes of Chronic Exertional Compartment Syndrome of the Leg at a Six-Year Mean Follow-Up

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Division of Sports Medicine, Department of Orthopedic Surgery, NYU Langone Health, New York, NY

## BACKGROUND

- Prior studies have investigated outcomes of patients with Chronic Exertional Compartment Syndrome following fasciotomy including patient reported outcomes and complication rates at short term follow up.
- These studies have demonstrated mixed results concerning outcomes following fasciotomy for Chronic Exertional Compartment Syndrome.
- Operative treatment of Chronic Exertional Compartment Syndrome (CECS) with fasciotomy has been shown to be effective in symptomatic resolution of CECS, but outcomes at medium to long term follow-up are not well understood.

## OBJECTIVE

The purpose of this study is to present the mid to long term outcomes for CECS patients treated with fasciotomy.

## METHODS

- A retrospective review of patients who underwent fasciotomy of one or more compartments for treatment of CECS at the authors' institution from 2010 to 2021 was conducted.
- Outcomes were assessed using the Tegner Activity Scale, symptom resolution, patient satisfaction, return to sports and the EQ-5D-5L survey.

**Table 1.** Demographics

| Demographics | N=34 |
|---|---|
| Age (years) | 29.6 ±12.7 |
| Sex | M: 47.1%<br>F: 52.9% |
| BMI (kg/m$^2$) | 26.8 ±4.1 |
| Symptom Laterality | Right: 5.9%<br>Left: 17.6%<br>Bilateral: 76.5% |
| Follow-up (years) | 6.1 ±2.2 |
| Fasciotomy Location | % Anterior Compartment: 94.1%<br>% Lateral Compartment: 94.1%<br>% Deep Posterior Compartment: 35.3%<br>%Superficial Compartment: 38.2% |
| Number of Compartments Involved in Fasciotomy | % 1 Compartments Involved: 2.9%<br>% 2 Compartments Involved: 61.8%<br>% 3 Compartments Involved: 5.9%<br>% 4 Compartments Involved: 29.4% |

**Table 2.** Regression Analyses for Effect of Demographic Variables on Patient Reported Outcomes Following Fasciotomy for CECS

| | EQ-5D-5L | | VAS Pain | | VAS Satisfaction | | Return to Sport | |
|---|---|---|---|---|---|---|---|---|
| ***Predictor*** | ***Estimate*** | **P-value** | ***Estimate*** | **P-value** | ***Estimate*** | **P-value** | ***Estimate*** | **P-value** |
| Age | -0.001 | 0.442 | -0.045 | 0.905 | 0.551 | 0.142 | -0.014 | 0.640 |
| Sex | 0.002 | 0.955 | 5.882 | 0.530 | -16.993 | 0.069 | 1.253 | 0.167 |
| BMI | <0.001 | 0.986 | -0.396 | 0.734 | 2.591 | **0.022** | -0.134 | 0.202 |

## RESULTS

- Thirty-four patients, 16 males and 18 females, were included. Mean age at the time of surgery was 29.6 ±12.7 years with mean follow-up 6.1 ±2.2 years (range 2.5-10.3).
- Tegner activity level scores at final follow up were significantly improved compared to symptom onset (mean: 4.8 vs. 3.3, p<0.001).
- Regression analyses demonstrated there was a significant association between increased BMI and increased VAS satisfaction (β=2.591, p=0.022).
- Increase in preoperative symptom duration (β<-0.001, p=0.043) and a diagnosis of popliteal artery compression (β=-0.134, p=0.023) were each associated with a decrease in EQ-5D-5L.
- Twenty-six (76.5%) patients returned to sport and of these patients, 18/26 (69.2%) returned to their preinjury level.
- The average time to return to sport was 23.4±27.4 months. Twenty-four (70.6%) patients would be willing to have their fasciotomy again and average VAS satisfaction rate was 78.1.
- Patients who had fasciotomy of 2 or less compartments had less VAS pain (p=0.045) and a higher Tegner score at final follow-up (p=0.031) than those who had fasciotomy of 3 or more compartments.
- Lastly, 15 (44.1%) patients reported experiencing paresthesia after their operation.

## CONCLUSIONS

- Medium-to long-term outcomes of patients with CECS treated with fasciotomy demonstrated high satisfaction levels and a high rate of return to sport.
- However, rate of minor complications including paresthesia, swelling and cramping was high.