Custom knee device (CKD) for the treatment of knee flexion contractures (KFC) after ISKD femoral lengthening.

**Study conducted at Rubin Institute of Advanced Orthopedics Rehabilitation Department, Sinai Hospital, Baltimore, MD 21215**

**Introduction:**
- Limb lengthening with an ISKD can result in Knee Flexion Contracture (KFC).
- The (CKD) is a custom molded, hinged brace that delivers a slow sustained stretch over time.
- Use of the CKD with physical therapy is an alternative to surgery for Rx of KFC.

**Material:**
- Retrospective review of 27 KFC after ISKD femoral lengthening from 2002 to 2007
- 23 subjects (27 femurs)
- Mean age 24.7 years (range 11 - 58 years)
- Mean lengthening 5.4 cm (range 3.3 - 7.5 cms)
- Mean KFC 36º (range 10º - 90º)
- CKD constructed on average 4.2 weeks after index surgery (range 1.0 - 7.0 weeks)
- 14 Posterior tibial subluxation
- 8 subjects had nerve symptoms
- 5 subjects had nerve signs and required peroneal nerve release.

**CKD + Physical Therapy Regimen**
- PA Joint Mobilization and stretching of hamstrings, TFL and IT band.
- Neuromuscular electric stimulation to quadriceps mechanism
- CKD worn 6-8 hrs/day with daily stretching at home.

**Results:**
- Full extension within 5
  - 25/27 (93%)
- 10-15 degrees residual KFC
  - 2/27 (7%)
- Mean recovery time
  - 7.9 weeks (5-11)

**Conclusion:**
- Successful resolution of Knee flexion contracture in majority of cases 25/27 (93%).
- 2 KFC’s that failed CKD + PT improved after soft tissue release followed by CKD+PT.
- CKD is customized, simple/safe to use and reliable modality to treat KFC.
- Inexpensive – ($125 to $150)

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Disclosure: Research funding received from Orthofix, Inc.

Acknowledgement:
Dr Janell Conway, Dr John Herzenberg, Dr Dror Paley and Dr Shawn Standard performed surgeries on these patients. Authors wish to thank them for their support and guidance.