CLINICAL OVERVIEW

STATIC PROGRESSIVE STRETCH FOR THE TREATMENT OF KNEE STIFFNESS

Full Study appeared in the Knee. 2008; (15) 272-278. Peter M. Bonutti, M.D., Mike S. McGrath, M.D., Shelton A. McKenzie, M.D., Slif D. Ulrich, M.D., Thorsten M. Seyler, M.D., Michael A. Mont, M.D.

Persistent knee stiffness is common after knee arthroplasties, cruciate ligament repairs and trauma. Static progressive stretch (SPS) protocols have shown success in treating stiffness of the elbow, ankle and knee in case reports and small case series.

This study evaluated the effectiveness of Joint Active Systems (JAS) SPS device therapy as a treatment method for patients who had refractory knee stiffness, and compared outcomes to published results of other therapeutic modalities. Forty-one patients who had knee stiffness and who had not improved with conventional physical therapy (PT) were treated with a patient-directed JAS SPS orthosis.

Patient outcomes were comparable to other non-operative treatments reported in the literature, but results in the present study occurred in a shorter mean treatment time. An orthosis that utilizes the principles of SPS may be a successful treatment for improving range of motion and satisfaction of patients who have knee stiffness.

Materials and Methods

- 41 consecutive patients with knee stiffness who had failed other therapeutic modalities were treated with a bi-directional JAS SPS knee orthosis (Joint Active Systems, Effingham, IL).
- Knee stiffness was defined as a total arc of motion < 90^0 or a flexion contracture that impaired quality of life.
- All patients had undergone standard PT for a mean of 10 weeks.
- The mean interval between onset of stiffness and initiation of JAS SPS orthosis use was 17 weeks.
- Patients were instructed to perform three 30-minute SPS sessions per day, per direction of motion loss.
- Duration of treatment, knee ROM, compliance, satisfaction and complications were measured for each patient at the completion of the study.

Results

- All patients completed the treatment and experienced a significant increase in total active ROM.
- Mean duration of JAS SPS orthosis use: 9 weeks.
- Mean knee ROM gains: Total Arc of Motion: 33^0, Extension: 9^0, Flexion: 24^0.
- No injuries, skin compromise, nerve palsies or other complications with the use of the device were reported.
- The mean satisfaction score was 7.6 points (range: 0 to 10).

Discussion/Conclusion

- JAS SPS orthosis use achieved knee ROM gains comparable to or better than results attained with other splinting methods, such as dynamic splinting, but with significantly shorter treatment time.
- JAS SPS orthosis therapy may provide patients with an alternative to surgery for the treatment of persistent knee stiffness.
- JAS SPS orthosis is a valuable tool for treating joint stiffness of the knee in the outpatient setting.

Full Study Available
Please contact JAS at 800-879-0117 or info@jointactivesystems.com

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