



Treating Lace Bite in an ECHL Hockey Player

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Abstract

Athlete is a 25 year old (73 inches and 204lbs) male minor league Hockey athlete. Athlete has prior medical history of groin strain. Athlete reported pain along the right extensor hallucis tendon that has been gradually worsening. Athlete is point tender along the extensor hallucis tendon, and has some swelling and redness. Athlete has slight range of motion deficit and pain with full extension. Athlete was treated with ultrasound therapy of 1.0 W/cm² intensity of 5 minute duration using a 2cm head. Athlete also received padding, both foam and gel, of his preference to reduce friction. Finally, the use of cryotherapy with ice bags for 15 minutes duration was utilized after activity. Athlete suffered previously a fracture of the foot and an inclusion cyst of his left lateral malleolus. This case demonstrated proper diagnosis and treatment of a common hockey injury, lace bite, to explore effective solutions to prevent lace bite from occurring, and to examine what factors specifically can have the highest probability to have the onset of lace bite.

Differential Diagnoses

- Extensor Hallucis Tendonitis (Lace Bite)
- Degenerative Arthritis
- Atypical Gout

Introduction/History

Athlete is a 25 year old male hockey player who trains and performs at a high level of intensity. He presented with pain with pressure along his left extensor hallucis tendon and the pain had been gradually worsening through training sessions.

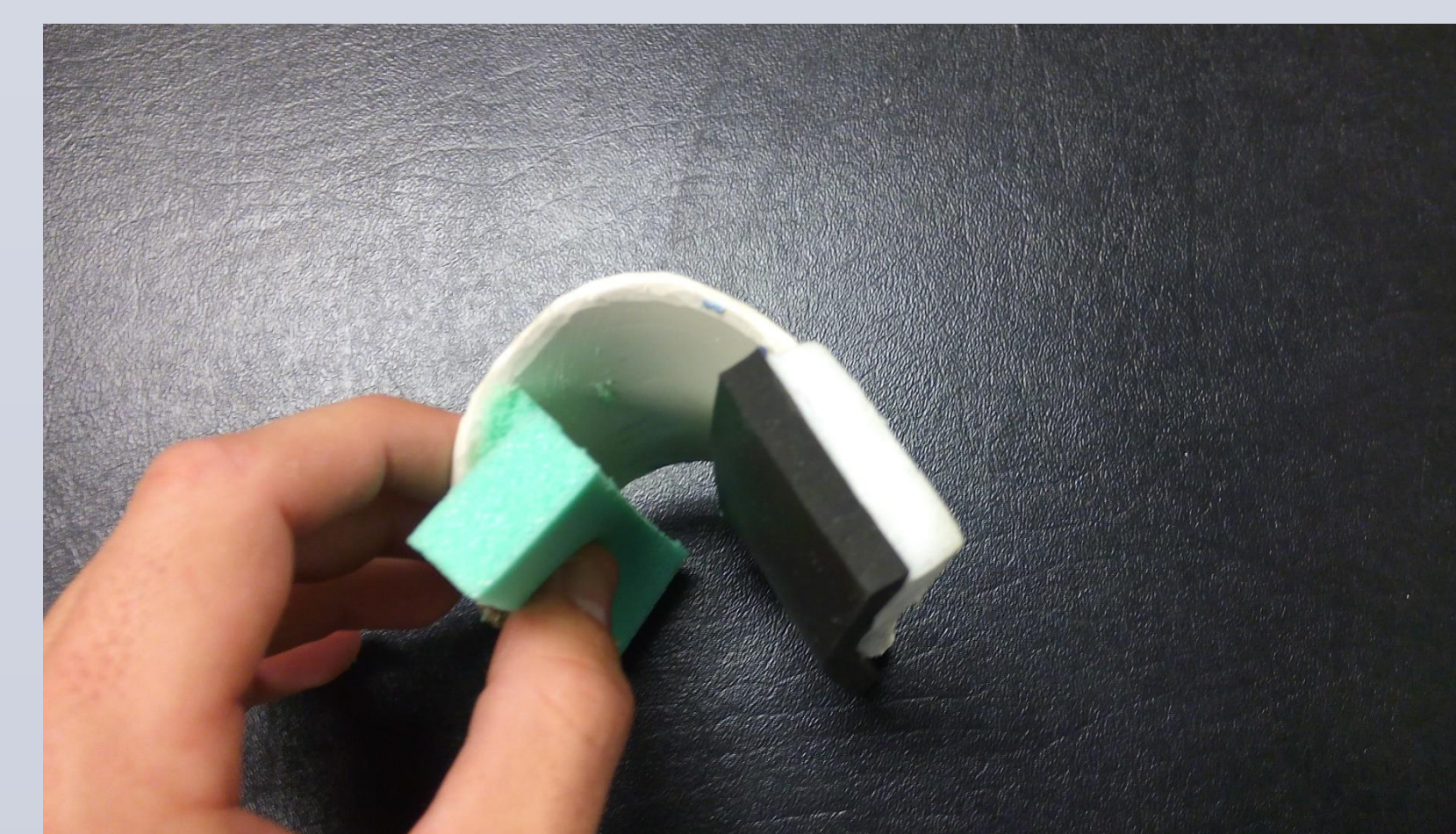
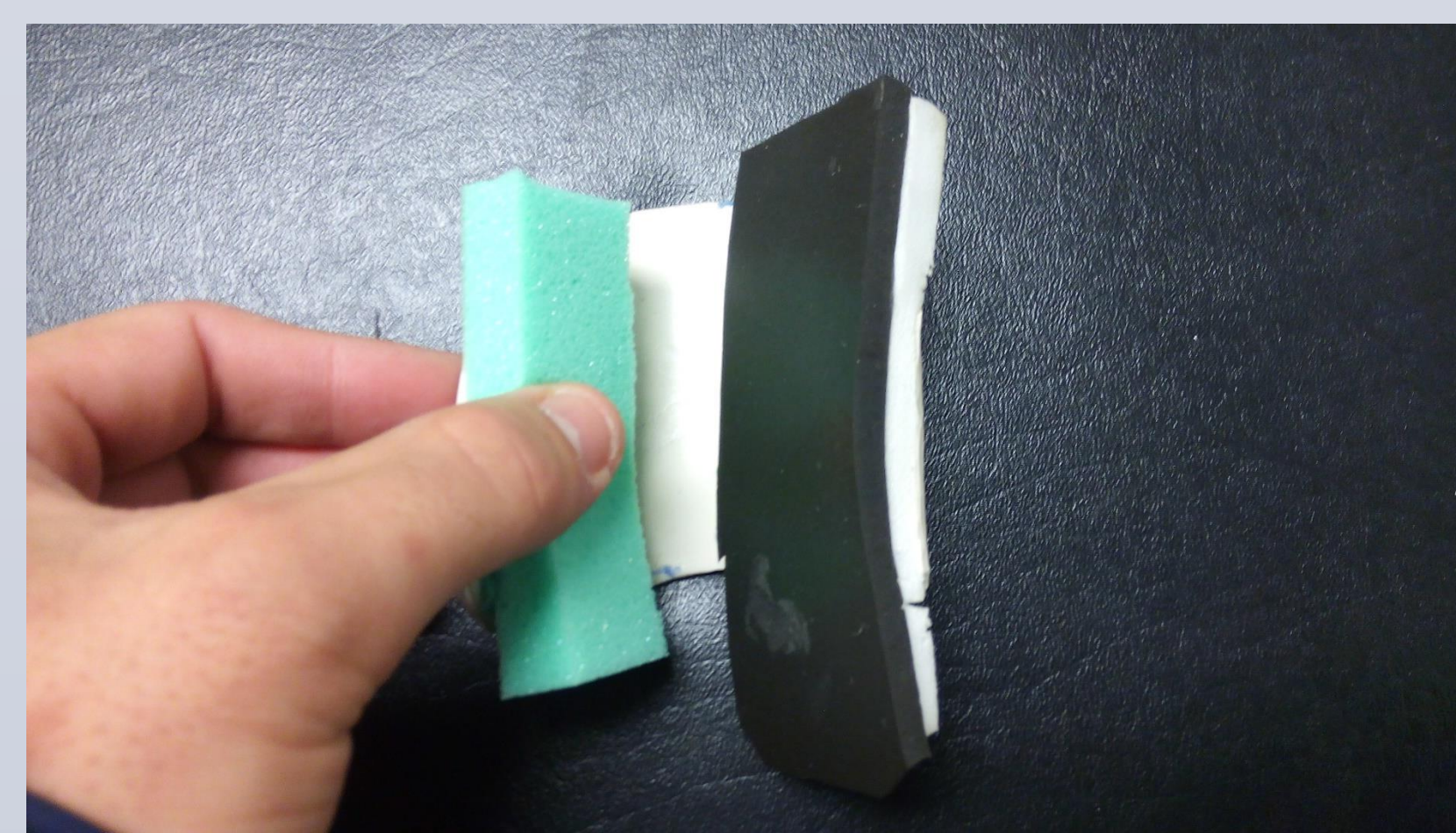
Although the athlete does not recall a specific mechanism of injury causing the pain, he believed it resulted from the hockey skates from which he trained in. The challenge for this athlete was his foot and ankle anatomy could have predisposed him to suffering from lace bite due to his medical history which includes a fracture of the foot and an inclusion cyst of his left lateral malleolus.

Purpose

Lace bite should be examined further because it is fairly common for anyone who participates in a sport in which skates are used. While lace bite can start out as slight discomfort around the foot and ankle, if left untreated, it can become severe enough to warrant surgery.

Treatment

Athlete began icing after practice daily to reduce swelling. Athlete was also treated before practice with ultrasound of 5 minute duration at 1.2W/cm² using a 2 cm head for a total power output of 2.4W. The reason for using ultrasound for this injury was that ultrasound stimulates the production of collagen, the main protein that makes up soft tissues like tendons and ligaments, accelerating healing time. Athlete also experimented with various foam and gel padding to test which one provides the most comfort while also not inhibiting athletic performance. The padding was used to eliminate slippage and compressive forces on the anterior foot. Mixed results arose regarding straight gel and foam padding. After receiving input from another Athletic Trainer, who recommended gluing foam padding to a molded orthoplast cast, athlete experimented with that technique.



Results

Treatment with orthoplast produced the most positive results as the hard but moldable cast created a tunnel in which the athletes skin could not be irritated over the area of the extensor hallucis tendon. After approximately 1-2 weeks of diligent application, the athlete's agitation subsided. Continuation of ice and ultrasound treatments were still utilized during this time. Reviewed literature supports the use of padding over the area where their laces cross in conjunction with anti-inflammatory medication (Janowicz,2006).

Conclusions

This case presented a common condition among athletes participating in skating sports with an atypical solution to more common padding techniques. Though creating a custom made apparatus of orthoplast molding and foam padding takes longer than traditional padding, the results in this case were more positive after weeks of trying solely foam or gel which yielded mixed results.

References

- Caselli, M., Gagne, A., & Kaplan, E. (2002). Ice Hockey Injuries: How to Maximize Treatment Results. *Podiatry Today*, 15(8).
- Janowicz, R. (2006). Common Skating-Related Injuries. *Podiatry Today*, 19(4).