How effective is Percutaneous ultrasonic fasciotomy in treating chronic Plantar Fasciitis?

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Abstract

Introduction

There have been many forms of treatment for chronic plantar fasciitis which have included corrective orthotics, exercise, and shockwave therapy. All of which have been successful in the recovery process for chronic plantar fasciitis, but these interventions have not always been successful in chronic plantar fasciitis patients. Recently, there has been a new form of treatment emerging that claims to cure chronic plantar fasciitis. The treatment is called Percutaneous Ultrasonic Fasciotomy. The treatment is a useful procedure for treating Plantar fasciitis as it can improve symptoms by 90% two weeks following the procedure. Improvement was maintained 6 months following that, leaving patients with increasing relief. Data sources: relevant sources will be located through Florida Gulf Coast University and Google Scholar, using web databases. The articles are required to be peer reviewed journals published in credible journal sources. Key words that will be used are chronic Plantar fasciitis, Orthotics, exercise, stretching, and shock wave therapy. Articles used are dated no later than 2005. Conclusion: In addition, to conservative measures for treating Plantar fasciitis, the utilization of the Percutaneous Ultrasonic Fasciotomy is also an effective treatment measure. This treatment is a useful procedure for patients that have been resistant to traditional non invasive treatments in the past and are still experiencing additional symptoms.

Purpose

Utilization of Percutaneous ultrasonic fasciotomy (PUF) Under ultrasound guidance the path to the diseased tissue is anesthetized prior to an incision being made. In addition to local anesthetics that block nerves, cold and/or ice has been used (Patel and others, 2015). Following this an incision is made medial to lateral through the skin to the diseased tissue to make way for the "knife" that will be used for the procedure. The incision will then be placed into the incision through the diseased tissue. The physician can now activate the pulsing motion of the knife and direct flow of fluid using a foot pedal. The fascia is being cut using Phacoemulsification and the tissue is being coagulated a suction is used to prevent bleeding. The procedure is monitored using imaging to see if the knife is placed properly and if bleeding and fibrosis formation, leading to growth factor release, collagen release and neovascularization. The procedure can be performed under local anesthetic and nerve blocks used. It is a quick procedure, taking less than an hour. This procedure can also include heel aponeurotic fascia, plantar fascitis, and the Percutaneous Ultrasonic Fasciotomy procedure's ability to match that success rate with patients who had chronic plantar fasciitis. With the shockwave therapy's success rate and the Percutaneous Ultrasonic Fasciotomy procedure's ability to match that success rate, this procedure exemplifies that Percutaneous Ultrasonic Fasciotomy can be an effective treatment for plantar fasciitis if just needs to be further researched to confirm that.

Case Report

Mechanism of Injury: The plantar fascia is a very sturdy and supportive structure that is very helpful in the biomechanics of the foot. Unfortunately, irritation of the plantar fascia can occur which is known as chronic plantar fasciitis. The actual cause of plantar fasciitis is still a subject that is under continuous research now and is not completely understood. Although a specific mechanism of injury has not been identified it is generally understood that, arising from injuries during the correct foot posture and pain endured with the injury. According to Cutts et al, general plantar fasciitis is an inflammation of the plantar fascia as a result of chronic stress. Although the specific cause is still under research, there have been common predisposing factors that increase an individual's chances of plantar fasciitis. Some of the common predisposing factors are Obesity, rearfoot pronation, pes cavus, pes planus, and a high-arched foot. Table 1 summaries the various research studies that have been conducted as reported by Truven. With orthotics, mainly a short-term solution, this treatment does not seem to have lasting effects. This treatment has shown to have lasting effects at two-year post-operation follow up approximately. With chronic plantar fasciitis, there is high a recurrence rate and a lasting treatment plan is vital for treatment.

Discussion and Summary

References


