

Carpometacarpal Osteoarthritis: Dry Needling of the Periosteum

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Introduction

Carpometacarpal osteoarthritis is a painful degenerative joint condition that affects the base of the thumb, often causing significant discomfort and functional limitations. Carpometacarpal (CMC) Osteoarthritis (OA) of the thumb is a weakening hand-wrist joint condition that influences 15% of people beyond 30 years old and up to 30% of post-menopausal ladies. CMC OA thumb torment limits holding, getting a handle on and expertise exercises, making a few normal utilitarian exercises challenging to perform, like holding a cup, brushing hair, conveying objects, or grasping a directing wheel [1]. Traditional treatments for this condition include medication, splinting and physical therapy, but they may not always provide adequate relief. Periosteal dry needling, a relatively novel therapeutic approach, has gained attention as a potential intervention for managing the pain and dysfunction associated with carpometacarpal osteoarthritis [2]. This study explores the concept and effectiveness of periosteal dry needling in the context of this specific joint condition, aiming to provide insights into its potential as an adjunctive or alternative therapy for individuals seeking relief from thumb osteoarthritis. An essential driver of CMC OA is believed to be related with spiral subluxation from the weakening of the front diagonal and dorsoradial tendons of the thumb, prompting joint incongruence, outspread subluxation, disintegration of the articular ligament, irritation, agony and joint solidness. Compensatory hyperextension of the Metacarpophalangeal (MCP) joint is in many cases seen as the condition advances [3].

Description

Carpometacarpal (CMC) osteoarthritis is a condition that affects the joints at the base of the thumb, specifically the carpometacarpal joint. These joints are essential for thumb movement and function, allowing for gripping and pinching activities [4]. Osteoarthritis is a degenerative joint disease characterized by the breakdown of the cartilage that covers the ends of bones in a joint. In the case of CMC osteoarthritis, the cartilage within the carpometacarpal joint gradually deteriorates, leading to pain, stiffness and reduced thumb mobility. Dry needling of the periosteum is a therapeutic technique used in the management of musculoskeletal pain and dysfunction. It involves the insertion of thin, solid needles (usually acupuncture needles) into specific points on the bone's outer layer, known as the periosteum. The goal of this procedure is to stimulate the periosteum, which contains nerve endings and blood vessels, in order to promote a healing response and alleviate pain [5].

Here's a more detailed description of dry needling of the periosteum in the context of CMC osteoarthritis:

Patient assessment: Before performing dry needling, a thorough assessment of the patient's condition is conducted. This assessment includes a physical examination, medical history and possibly imaging studies like X-rays or

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MRI to confirm the diagnosis and determine the severity of CMC osteoarthritis.

Needle placement: A trained healthcare provider, such as a physical therapist or physician, identifies the specific points on the thumb's carpometacarpal joint where the needles will be inserted. These points are typically chosen based on the location of pain and tenderness.

Needle insertion: The provider uses sterile, thin needles to gently penetrate the skin and reach the periosteum of the affected joint. The needles are typically inserted at a shallow depth to avoid deeper structures like nerves and blood vessels.

Stimulation: Once the needles are in place, the provider may manipulate them slightly by rotating or moving them back and forth. This manipulation stimulates the periosteum, promoting blood flow and the release of natural pain-relieving substances, such as endorphins.

Duration and frequency: The duration of the dry needling session and the frequency of treatments will vary depending on the individual patient's needs and the severity of their CMC osteoarthritis. Some patients may require multiple sessions over several weeks.

Post-treatment care: After the procedure, patients may experience temporary soreness or discomfort at the needle insertion sites. This usually subsides within a day or two. Providers may recommend ice, rest and gentle exercises to help manage any post-treatment discomfort.

Monitoring and follow-up: Patients are typically monitored throughout the treatment process to assess their progress and adjust the treatment plan as needed.

Conclusion

Carpometacarpal osteoarthritis can be a source of persistent pain and impaired hand function, significantly affecting the quality of life for those affected. While traditional treatment approaches have provided relief to some extent, the quest for more effective interventions continues. Periosteal dry needling, an emerging therapy, has shown promise in other musculoskeletal conditions and is now being explored as a potential solution for thumb osteoarthritis. As we delve into the concept and effectiveness of periosteal dry needling for carpometacarpal osteoarthritis, this research aims to shed light on whether this minimally invasive procedure can offer tangible benefits in terms of pain reduction and improved hand function. If the study yields positive results, it could open new avenues for individuals seeking relief from the challenges posed by thumb osteoarthritis, providing them with a potential alternative or adjunctive therapy to enhance their overall well-being and quality of life.

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Conflict of Interest

There are no conflicts of interest by author.

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