Management of Tietze syndrome pain with Hilterapia® – a case report

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INTRODUCTION

Tietze syndrome is a rare disease of unknown aetiology characterized by painful nonsuppurative swelling over costal cartilages [1]. This condition is differentiated from costochondritis with the presence of tender swelling at the coastal cartilaginous area. The name of the condition is derived by the doctor who first described it in 1921 [2,3].

The signs and symptoms of Tietze syndrome usually develop before age 40 and the condition affects both sexes equally [4].

The most common affected joints are 2nd and 3rd costochondral junctions and the pain ranges from mild to severe. More than 70% of lesions are unilateral and affect one joint. Multiple lesions affect same-side neighbouring joints. Chest pain is the main complaint, which can be increased by coughing, deep breathing, and lying prone. If left untreated, Tietze syndrome can become chronic, deeply affecting the quality of life of patients. The exact cause of Tietze syndrome is still unknown; however, some researchers have speculated that multiple microtrauma to the anterior chest wall may lead to the development of Tietze's syndrome [5,6].

Treatment strategies are usually conservative and comprise manual therapy and administration of anti-inflammatory agents and analgesics either orally, topically, or by injection. Focal local anaesthetic injection alone may also be a useful therapeutic and diagnostic tool [7].

Physical therapies have also been used to treating the inflammation and pain of Tietze syndrome. In this light, Hilterapia® was considered a new therapeutic approach who can be beneficial for the treatment of patients affected by this pathology.

Hilterapia® peculiarity is its ability to transfer highly energetic photonic packages in deep tissues in a non-invasive way. Studies proved the efficacy of Nd:YAG laser in inducing photomechanical and photothermal effects in deep structures [8]. The application of Hilterapia® has showed good results in osteoarticular and neuromuscular diseases [9-11] with consequent improvement of patient quality of life [12,13]. This case report describes the application of Hilterapia® in the treatment of a young patient affected by Tietze syndrome that did not respond to pharmacological and physical therapy with the aim of controlling pain and recovering quality of life.

CASE DESCRIPTION

A 17 years old female patient presented with pain at the level of the left sternum region lasting for 5 months, which had not been resolved by pharmacological anti-inflammatory therapy and that was severely impairing her every day life.

Thoracic and complete spine (in load) RX revealed swelling of the sternoclavicular joint and of the third chondrosternal joint.

The patient received Hilterapia® treatment with SH1 device (ASA Srl, Arcugnano, Italy). SH1 is a Nd:YAG laser, Class IV, with wavelength 1064 nm. Hilterapia® treatment involved 9 daily sessions focused on sternum, clavicle and up to the fourth left ribs. The treatment modality was scanning. The treatment parameters are reported in Table 1:

	Frequency (HZ)	Dose (mJ/cm²)	Total dose for each session (J)
Sessions 1, 2, 8, 9 (2 steps in each session):	15	610	1000
	10	760	
Sessions from 3 to 7 included (4 steps in each session):	35	660	1600
	30	710	
	15	610	
	10	760	

Table 1 – parameter used in the treatment cycle.

Pain evaluation was performed using a Visual Analogue Scale (VAS) . It is a scale comprising 10 grades, with 10 representing 'unbearable pain' and 0 representing 'no pain'. It is a pain scale commonly used in the medical field, and it was shown to be a reliable and valid measure of pain [14,15].

Before starting the Hilterapia® sessions, patient had severe pain (VAS=10), after 2 treatment sessions the pain has been reduced to VAS=5.

Forty days after the last Hilterapia® session the patient remains asymptomatic (VAS=0) and has resumed her life activities without limitations. Specifically, the patient has been able to proceed to postural exercise without any problem.

DISCUSSION

This young patient presented severe pain due to Tietze syndrome which was not responding to the drug anti-inflammatory treatment administered. She had already tried physical therapy which produced no beneficial effects. The pain resulted in a heavy impact on her life and her goal was to find a treatment able to reduce the pain level to an acceptable degree. Given that the Tietze syndrome is not very well known and the pathological mechanism is still not understood, the treatment approach was not focused on illness resolution but on pain and edema reduction to avoid chronicization of the condition in such a young patient.

Hilterapia® was selected due to anti-edema properties and because of its well-known fast action on osteoarticular pain, even in severe acute pain. [11, 16-18]

The result obtained in 9 sessions was a complete elimination of pain, which persisted at 40 days follow up. This therapeutic effect allowed the patient to return to her daily activities, including physical exercise for postural recovery, without impairment, inducing a very valuable improvement in her quality of life.

Based on the reported case, Hilterapia® could be a suitable tool to manage Tietze pain even in patients which received no benefits by pharmacological therapy. Larger studies are needed to confirm this preliminary assessment.

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