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THE ROLE OF HYPERBARIC OXYGEN THERAPY IN A CASE OF SUSPECTED PUBIC OSTEITIS IN PROFESSIONAL ATHLETE.

IL RUOLO DELLA OSSIGENOTERAPIA IPERBARICA IN UN CASO DI SOSPETTA OSTEITE PUBICA IN ATLETA PROFESSIONISTA.

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Abstract.
"Pubalgia" is known to be an invaliding condition for athletes, until to force the athlete to long absences from the training or competitions, cause of wrong diagnosis or inadequate therapy. Here we describe the clinical case of a patient, male, 29, professional soccer player, admitted to our ambulatory for right inguinal and pubic district pain, irradiated to perineum until sacrum-coccygeum joint. A pelvic muscle-skeletal segment MRI examination showed a 1 centimeter diameter endomedullar area, to be considered as a bone medullar oedema at anterior extremity of the right pubic branch. After careful clinical examination and verified the patient recruiting, HBOT treatment was started with this protocol: 2.8 ATA, inspiring O2 100% mixture, 1-hour a day. On 28th treatment meeting patient felt a significant reduction of pain symptomatology. Following MRI examination was performed on 48th meeting treatment and showed evident reduction of oedematous area.

KEYWORDS: Hyperbaric Oxygenation, Osteitis Pubic, Pubalgia

Riassunto.
La "pubalgia" è riconosciuta come condizione molto invalidante per lo sportivo, tanto da costringere l'atleta a lunghe assenze dagli allenamenti e dalle competizioni per diagnosi imprecisa o terapia inadeguata. Descriviamo il caso di un paziente di sesso maschile, 29 anni, calciatore professionista, giunto al nostro ambulatorio con sintomatologia dolorosa in regione inguino-pubica di destra, irradiantesi in regione perineale sino all'articolazione sacro-coccigea. Un esame RM muscolo-scheletrico della regione pelvica evidenziava, in corrispondenza dell'estremo anteriore della branca pubica di destra, una piccola area endomidollare, estesa per circa 1 cm, riferibile ad edema della midollare ossea. Dopo attento esame clinico e verificata la reclutabilità del paziente, veniva intrapreso trattamento HBOT, con il seguente protocollo: 2.8 ATA in miscela di O2 al 100%/1 ora/die. Alla 28a seduta di trattamento il paziente notava un apprezzabile miglioramento della sintomatologia dolorosa. Il successivo esame RM, eseguito in 48a seduta di trattamento, evidenziava la notevole riduzione dell'area edematosa.

PAROLE CHIAVE: Ossigenoterapia Iperbarica, Osteite Pubica, Pubalgia

Introduction

The term "pubalgia" describes a pain syndrome of the abdominal, pubic and crural district, but with different anatomic and clinical scenes.
Osteitis pubic is characterized by diffuse pain, inflammation, and bony changes in the pubic symphysis. "Pubalgia" is known to be an invaliding condition for athletes, until to force the athlete to long absences from the training or competitions, cause of wrong diagnosis or inadequate therapy (1).
Professional athletes, and anyone practices sport activity at professional level dislike long-term treatment based on FANS or cortisone, cause of frequent gastric side-effects and a possible risk of anti-doping tests interference.

Case report

Here we describe the clinical case of a patient, male, 29, professional soccer player, admitted to our ambulatory for right inguinal and pubic district pain irradiated to perineum until sacrum-coccygeum joint. The symptomatology started 8 months before and grew up during the time, in occasion of sport activity until patients became unable to sport performance.
The patient treated the symptomatology with FANS, kinesitherapy, lasertherapy, agopuncture without any result. He described his pain as 6, concerning visual analogic scale (VAS) from 0 to 10, were 0 means no pain and 10 the maximum pain. A pelvic muscle-skeletal segment MRI examination showed a 1 centimeter diameter endomedullar area, to be considered as a bone medullar oedema at anterior extremity of the right pubic branch, at the back of pubic symphysis (Fig. 1). No pelvic-perineum muscle-tendon lesions have been showed.

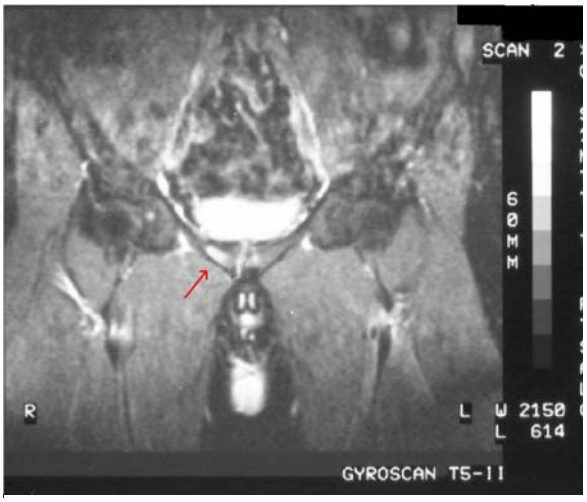

Fig. 1: MRI image obtained by STIR sequences. Hyper intensity of right iliopubic branch bone tissue such as probable intraspongious oedema. Minimal bone-related fluid shedding associated (Red arrow).

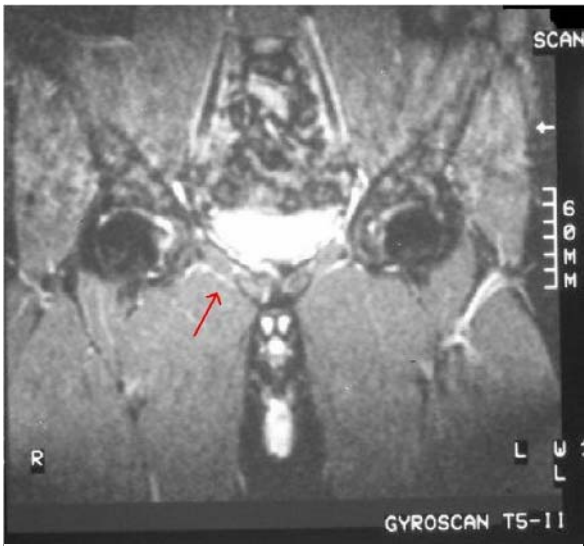

Fig. 2: MRI image obtained by STIR sequences. Reduction in hyper intensity and intraspongious oedema previously pointed out (Red arrow).

Moreover, ultrasounds scanning examination of right inguinal region pointed out alteration on insertion intensity of great abductor muscle, with irregularity of the below cortical outline as an insertion inflammation.
After careful clinical examination and verified the patient recruiting, HBOT treatment was started with this protocol: 2.8 atmospheres absolute pressure (ATA), inspiring O_2 100% mixture, 1-hour a day. Pain measurement was performed by VAS: the purpose of our treatment was to obtain a VAS score less than 3.
On 28th treatment meeting patient felt a significant reduction of pain symptomatology, describing a VAS of 4. Following MRI examination was performed on 48th meeting treatment and showed evident reduction of oedematous area (Fig. 2). Patient reported a VAS less than 3, so we decided for patient discharge, recommending physical rehabilitation by physiokinesitherapy.

Conclusions

On the scene of "algo-dystrophies", as osteitis pubis, one of the basic moment on functional damage genesis is represented by microcirculation alteration with consequent oedema generation and compression-distraction symptoms: that causes metabolic alterations, bone matrix rarefying, pain and functional limitation (2,3).
The patient responded completely to HBOT. During beginning phase (meeting treatment 1-20), patient complained of an increasing of pain to ascribe, probably, to beginning of oedema re-absorption. Afterwards, a constant regression of pain was achieved.
Hyperbaric oxygen osteo-genesis activity is

time well-known, so HBOT, in a multidisciplinary therapeutic approach, cause of his beneficial properties on microcirculation (4-6), holds a primary role, making a break in the vicious circle "oedema-compression-microcirculation alteration-oedema".
HBOT treatment is indicated, in all diseases related to tissue oxygen tension reduction, exploiting the increasing of plasmatic oxygen percentage, according to Henry principle. HBOT carry out his anti-oedema action through a direct vasoconstrictive action on arterial and venous component of microcirculation (6). In particular, arteriolar vasoconstriction could make a reduction in arterial flow for more than 30%, with consequent lesser venous stasis, lesser compression on lymphatic vessels and better drainage (4,6). Venous vasoconstriction, instead, determines a direct anti-oedema action because it works like a "*vis a tergo*", increasing venous drainage, reducing oedema.

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