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Case-study

RESOLUTION OF A CASE OF POST-TRAUMATIC ELBOW BURSITIS WITH OXYGEN-OZONE THERAPY

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ABSTRACT

Elbow bursitis is an inflammatory disease of the synovial bursa which is located near the olecranon of the ulna. The authors report a case of post-traumatic elbow bursitis treated and completely resolved in a very short time and without any side effects with oxygen-ozone infiltrative therapy.

KEYWORDS: *oxygen, ozone, elbow bursitis, medical ozone*

INTRODUCTION

Under normal conditions, the bursa of the elbow appears to have a flattened shape, but in cases of inflammation, it swells due to the increase of fluid inside it. Nowadays, in addition to specific direct causes, various risk factors have been recognized, which can increase the chances of their occurrence.

The direct causes are trauma to the elbow, prolonged pressure in the elbow, infections following cuts, wounds, or insect bites at the olecranon level.

The risk factors for olecranon bursitis are:

Elbow surgery: including minimally invasive operations such as arthroscopies;

Major traumas such as fractures: the most frequent bone injuries for this joint are the fracture of the olecranon, the fracture of the radial head, and the distal fracture of the humerus;

Forms of rheumatic diseases: as in the case of rheumatoid arthritis or gout;

No apparent cause: a small percentage of patients develop elbow bursitis without any currently known reason.

This condition is characterized by the appearance of various symptoms, not to be confused with those deriving from

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epicondylitis, which may be present concomitantly. Symptoms and signs are:

Local swelling: the swelling in severe cases can have a size of several centimeters, similar to that of a ping pong ball;

Heat: in cases where there is an acute inflammatory state (with or without infection);

Pain: present both on palpation of the bursa and on movement, especially in the degrees of maximum flexion, since the bursa is stressed in that position. Pain is usually local, but in some cases, it radiates downwards, along the forearm, and upwards along the arm. Pain is often associated with a burning sensation.

Reduction of strength, especially in the extension movement;

Reduction of joint function: difficulty performing many normal daily activities, particularly resting the elbow on a rigid surface (1-14).

Treatment

The classic treatment of post-traumatic elbow bursitis differs according to the severity of the clinical picture. If the bursitis is mild, it is usually sufficient to use an ice pack, observe a rest period, combine an anti-inflammatory drug to reduce inflammation and pain, and a compressive elastic bandage to contain the discomfort caused by the movements. In addition, it is useful to associate physiotherapy that has no contraindications or side effects.

In most severe cases, it is necessary to aspirate the synovial fluid contained in the inflamed bursa and proceed with the infiltration of corticosteroids directly into the bursa to extinguish the inflammation and reduce the risk of it forming again. If there is a septic state with purulent material in the bursa, both intrabursal and systemic antibiotic drugs should be used. In cases where these therapeutic approaches fail, surgical removal of the bag must be performed (1 ,6, 7, 8, 10).

MATERIALS AND METHODS

A mixture of Oxygen Ozone (O_2-O_3) is used locally through infiltrations and systemically using the venous and/or rectal routes (through insufflations).

The treatment must be adapted to the pathology to be treated by changing the concentration of ozone. For this, special devices must be used (suitably certified for medical use) which produce the mixture of Oxygen Ozone (O_2-O_3), starting from pure oxygen. The treatment is safe, has no local effects, and has few contraindications.

In order to produce the oxygen-ozone mixture, a Maxi Ozon Active Generator Device (Medica S.r.L., Bologna, Italy) was used, equipped with a digital photometer for the regulation of ozone concentrations and with check valves for the collection of the gaseous mixture in absolute sterility (15-24).

Clinical case

M.B. is a 59-year-old male, developed bursitis following repeated trauma to his left elbow with local pain and hot and red skin. The ultrasound examination carried out immediately after the appearance of the swelling of the olecranon bursa confirmed the diagnosis of left elbow bursitis (Fig. 1).

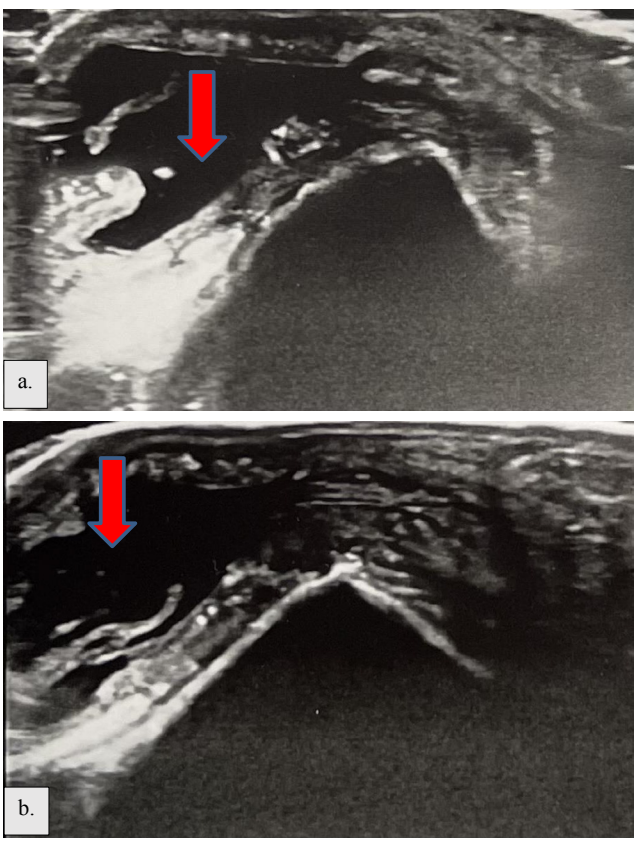

Fig. 1. ***A-B)*** *Ultrasound: effusion into the olecranon bursa (arrows).*

A minimally invasive treatment with oxygen-ozone (O_2-O_3) was proposed to the patient, who signed the consent form. Three therapeutic sessions delayed by 7 days from each other were scheduled. The treatment was performed

using 18 G pink code needles. Infiltration of the olecranon bursa does not cause particular pain. Therefore we can use needles of a slightly higher caliber than other oxygen-ozone treatments without the need for a local anesthetic, after local disinfection with betadine (Fig. 2-5).

RESULTS

The patient had a complete recovery 7 days after the end of the therapy (Fig. 6).

DISCUSSION

The classic treatment of post-traumatic elbow bursitis differs according to the severity of the clinical picture. If the bursitis is mild, it is usually sufficient to observe a period of rest, combine an anti-inflammatory drug to reduce inflammation and pain, and use an ice pack and a slightly compressive elastic bandage to limit movement.

In the most severe cases, it is necessary to aspirate the synovial fluid contained in the bursa and proceed with the infiltration of corticosteroids directly into the bursa to stop inflammation and reduce the risk of relapse.

In addition to drugs, bursitis therapy can also include applications of local physical therapies (such as laser therapy, cryotherapy, or ultrasound). In some more severe cases, especially if relapsing or difficult to resolve, surgical removal of the inflamed bursa may be indicated (15-24).

In cases with no clear traumatic origin (direct or from repeated trauma), it is essential to exclude any concomitant pathologies to be treated (e.g., gout or rheumatoid arthritis). Since the joint effusion was already significant in the case treated by us, it was necessary to empty the olecranon bursa.

Six cc of blood serum was aspirated, and 5-6cc of the mixture of O_2-O_3 at a concentration of 16 µg / ml was immediately injected (using the same needle). We decided to treat the patient with oxygen-ozone instead of the standard corticosteroid therapy to avoid side effects that often follow such infiltrations.

In the reported case, from the first session, the clinical improvement was noticeable, with the almost total disappearance of the painful symptoms and consequent better joint mobility. At the second session, after two days, the aspiration of serum-blood fluid was decidedly less than 3 cc. Furthermore, in this case, 5/6 cc of the oxygen-ozone mixture at 16 µg / ml were infiltrated, while, after a further 2 days, at the third treatment, there was no longer any need to empty the olecranon bursa. Finally, at the clinical check-up seven days after the last treatment, there was no longer any sign of bursitis

Fig. 2. *Disinfection of the olecranon bursa.*

Fig. 3. *Puncture of the olecranon bursa with an 18G needle.*

Fig. 4. *Aspiration of the blood serum liquid present in the olecranon bursa that is proof of post-traumatic genesis of bursitis.*

Fig. 5. *Infiltration of the bursa with an oxygen-ozone mixture at 16 µg /ml.*

treated with complete resolution of the painful symptoms, with normal skin and no longer red.

Fig. 6. *Check-up 7 days after the end of the treatment.*

CONCLUSIONS

Based on the reported clinical result, although this is a single case, we believe that oxygen-ozone therapy is an extremely effective, fast, safe therapy, free of side effects and contraindications. In conclusion, we recommend considering the treatment of the olecranon bursa with oxygen-ozone therapy as the first therapeutic approach in the case of post-traumatic elbow bursitis.

Conflict of interest

The authors declare that they have no conflict of interest.

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