Introduction

Algodystrophy syndrome is a term which encompasses a wide clinical specter and is closely related to posttraumatic reflex dystrophy, posttraumatic sympathetic dystrophy, algoneurodystrophy, shoulder-arm syndrome, osteoneurodystrophy and a causalgic syndrome (fig.1, 2) [3, 9]. Algodystrophy is thought to be caused by combining an exogenous factor (circulatory insufficiency or failure, swelling, painful and traumatic fracture repositioning, frequent repositions, poor bone ingrowth, etc), with a predisposing endogenous background (neuropsychological lability, hormonal imbalance, degenerative illnesses, high blood pressure, diabetes, etc.) [3, 5]. An X-ray scan reveals an ongoing spotty decalcification of the bone, most clearly visible around the fractures in the wrist area (fig. 3).

X-ray changes follow clinical manifestations with a slight delay. The clinical process consists of three stages [3, 12] – acute inflammation, chronic inflammation and a dystrophy stage. Different treatments are proscribed depending on the stage of the illness – physiotherapeutic procedures [5], analgesics, vasodilators, neuroleptics, Calcitonin, intravenous regional sympathetic blockades, ganglionic block [8].

Aim

The aim of this study is to show the effect of a complex drug and physiotherapeutic treatment for patients with algodystrophy syndrome after a distal radius fracture.

Materials and Methods

The study is based on 106 patients with distal radius fracture, 48 of which have developed the M. Zudeck complication. The complex therapy includes a drug treatment with calcitonin and a physiotherapeutic program: underwater gymnastics, kinesitherapy and electrotherapy using the magnetic field and interventional current. A positive effect from the complex drug and physiotherapeutic treatment has been achieved in all the observed indicators, regardless of the patients’ age and sex.

Results

Algodystrophy patients endure a strong, “burning” pain (20 points),...
which frequently is consistent and unaffected by drug treatments. Figure 4 shows the results of VAS tests for pain, comparing the results of patients without complications with the results of patients who developed the algodystrophy syndrome. The median test result values at the beginning and end of the observed period were used for the comparison.

When measuring the joint movement volumes and the presence of an edema at the radio-ulnar and wrist joints and hypotrophy of the muscles of the forearm, the results were similar.

Figure 5 shows the Wilcoxon curves for restoring DAL abilities at the end of the rehabilitation process for patients with and without algodystrophy. The curve of patients without algodystrophy or complications is on the right, which indicates better rehabilitation results after a distal radius fracture. The results of the hand functionality and hand grip tests are similar.

Figure 6 presents the duration of the recovery period for patients with and without algodystrophy after a distal radius fracture. The data shows a significantly longer rehabilitation process for patients with M. Zudeck complication, as well as a longer immobilization period (measured in months) compared to patients without complications.

**Implications**

1. 42.45% of all patients included in the study developed algodystrophy,
which is a serious problem and requires a prolonged rehabilitation process and Calcitonin treatment.

2. The applied rehabilitation program has shown to significantly influence the rehabilitation process in a positive way for patients who have developed Zudeck’s algodystrophy syndrome after a distal radius fracture.

3. When performing DAL activities, patients with Zudeck dystrophy face bigger difficulties, they recover more slowly and to a lesser extent than patients without the syndrome.

4. Analysis of the study results proves that a complex approach is required for treatment of posttraumatic conditions of the forearm for patients with algodystrophy syndrome.

Conclusions

The results and the clinical experience gained from the study give us reason to conclude that a positive effect from the complex drug and physiotherapy treatment is observed on all measured indicators for patients with Zudeck algodystrophy after a distal radius fracture, regardless of the patients’ age or sex.

References:


8. Matev I., Bankov St. Rehabilitation of lesions of the hand. Sofia, Medicine and Sports, 1977 [In Bulgarian].


