World Bulletin of Public Health (WBPH)
Available Online at: https://www.scholarexpress.net
Volume-19, February 2023
ISSN: 2749-3644

SURGICAL TREATMENT OF COMPLICATIONS OF THE ELBOW JOINT WITH THE HELP OF A CHARTERED - DISTRACTIVE VOLKOV – OGANESYAN APPARATUS

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Article history:

Received: December 8th 2022
Accepted: January 8th 2023
Published: February 4th 2023

Abstract:

Traumatology and orthopedics are now referred to by scientists in the current boskich, the treatment of injuries in the area of the elbow bygimi. Treatment of post-surgical complication of the elbow joint is a serious and unresolved problem, including contracture, outdated exit, ankylosis, and now the results of its treatment will satisfy neither the doctor nor the patient. Complications in the elbow joint are 20.5 -82% g. The reason for this is the dynamic apparatus of the elbow joint, the variety of operating costs. Any dislocation in the elbow joint has an effect on its fuction, since the joint is "super sensitive" .

Keywords: elbow joint, artro plastic, contracture, ankylosis, hinged-distracting apparatus, arthrolysis

MATERIALS AND METHODS OF RESEARCH. Based on our clinical observations, 37 patients were treated under the 2012-2023 RITOIAMSF program with outdated elbow dislocations. The age of patients ranged from 12 years to 41 years and older, while men were 33 and women 4. The high frequency of such disorders in men is estimated by the development of psychochemistry. Basically, 21 patients were in adolescence. It should be noted that in childhood and adolescence, the structure of the distal part of the humerus depends on the features. According to the emphasis of such scientists as (G.A.Bairov, 1962, N.S.Bondarenko, 1974, P.U.Orinbayev, 2021). Fractures of the humerus from the distal part in healthy people and adolescents, the humerus thickness of the limb is much thinner than the diaphyseal part of the shoulder.

The difference from adults is observed in pain as part of metaphysical cartilage, epiphyseolysis from the distal part of the shoulder during echo signals, osteoepiphysiolysis fractures. The type of damage is most often of a domestic nature, 14 patients were admitted to the hospital, most of whom were from rural areas. The mechanism of damage was typical (from a tree, wall, roof, horse, bicycle, as a result of falling they were injured. 8 patients with sports injury (football, wrestling). 6 due to traffic noise, 6 at school, 3 as a result of industrial noise. The reason for the dysfunction of the injury was not only the weight, but also the lack of proper and timely qualified care. Most of the patients received treatment at their place of residence. 19 patients were treated conservatively with elbow joint surgery, 14 patients were treated surgically, 4 patients did not go to the doctor at all.

The treatment of patients in the hospital was 6 years from 1 year. The majority of patients (89-90.8%) were hospitalized after 2 years with anatomical and functional disorders in the elbow joint. The patients underwent clinical, radiological, and electromyographic examinations.

1. Clinical examinations:
a) inquiry (complaints, anamnesis)
b) comparison of limbs
C) palpation to detect pain, deformity and detection of bone fragments.
g) determination of sensitivity in nerve directions
D) angulometric studies - flexion and extension in the elbow joint, pronation and supination of the wrist, determination of the specific axis of the arm.
e) measurement of the movement of the middle third in the shoulder and forearm area.
2. The X-ray was taken in 2 projections on the elbow joint when the patient enters the hospital, after surgery, during treatment, with long-term results.
3. An electromyographic examination can help determine the state of the neuromuscular apparatus and what restorative surgical treatment is indicated or contraindicated for use.

Indications and contraindications to reconstructive operations in the form of the use of the articular

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distraction apparatus of the elbow joint depend not only on the degree of pathological changes in the joint (fibrosis, bone ankylosis, severe restriction of movements, ineffectiveness of conservative treatment), but also on the neuromuscular condition, the patient's age, willpower, intelligence and profession of the patient.

It should be noted that according to the results of clinical observation, the state of ankylosis and contracture leads to numbness in the elbow joint for a long time, and atrophy of the shoulder joint is also observed. Such patients underwent physiofunctional and drug treatment before surgery (massage, electrical muscle stimulation, therapeutic gymnastics, thermal procedures, ATP, aloe), which gave good results after mobilizing operations.When determining the instructions for the operation, it was found that the mobility of the elbow joint in an open or closed joint is associated with the pathological condition and amplitude of the joint. Open mobilization of the elbow joint the hole in the joint is up to 30 degrees and a period of up to 6 weeks when the bone fragments are completely depleted, in such cases, arthrolysis of the elbow joint and cleaning of the joint area around the bone scar, resection of the skull of the wrist bone was carried out. In cases of bone ankylosis or fibrosis, when the displacement of the joint is 20 degrees, we restored it with the help of open mobilization and a hinge–distracting device.

Closed method instructions for using the device are performed when the muscles around the joint are in good condition, when the movement in the joint is more than 20 degrees. Contraindications to the use of an absolute hinge-distraction apparatus, gross anatomical changes in the neuromuscular system are sharp atrophy, large scar stretch marks around the joint, deep burns and scars as a result of inflammation, lack of bioelectric activity in the muscle.

All of our operations, in which the elbow joint was treated, were performed with the imposition of the Volkov-Oganesyan articular disorganizing apparatus and were divided into the following groups.

1. Mobilization of the elbow joint and the use of a hinge-distraction apparatus. (mixed with soft tissues, mixed with bone tissue, removal of ossifications, partial resection of articular surfaces)
2. Mobilization of the elbow joint with the help of arthroplasty and the use of a hinge-distraction apparatus

The use of arthrolysis and articular distraction apparatus was performed in 18 patients. The degree of mobility in the joint was 5-40 degrees, and the joint was functionally satisfactory, of which 4 patients underwent only soft tissue intervention, while fibrosis scars were only in soft tissues, there were no changes on the surfaces of the joint. However, 14 patients underwent surgery with intervention in bone tissue, that is, the removal of ossification, partial resection of articular surfaces, the internal mousetrap penetrated into the joint was removed by surgery.

The operation will be performed under general anesthesia, the skin is cut in accordance with the back incision (Langenbeck), i.e. from the middle end of the shoulder to the upper end of the forearm from the inside of the elbow protrusion, the joint is opened. After the incision of the skin and subcutaneous fat, the ulnar nerve is opened and taken into a rubberized "clamp". The triceps muscle mobilizes to the protrusion of the elbow, where its tendon is attached. Then it is pushed out and moved to the outside and up. The articular sac is cut around the elbow protrusion and partially cut off. With a sharp bending movement, intra-articular scars are torn and opened. The recess of the elbow is cleaned of fibrous tissue, if the inner part is filled with ossification, a recess is made using a rotary cutter.

The joint is fully examined, the articular surfaces and their cartilaginous bottom are visible, sometimes we move the flexor muscles of the fingers from the wound to examine and treat the articular surfaces from the place where the tendon is attached to the inner surface of the sandbox. Thus, we will get rid of cutting the triceps tendon. The advantage of such an incision is the moment of breaking the fingers and bending the hand, which makes it convenient to open the joint bag only on the front surface in order to stretch the stretched muscles.

If the surfaces of the joints are not affected by gross anatomical changes, the fibrosis scar is separated from the tissue and, if necessary, the joint capsule is cut off from the front side and the passive movement is checked for damage. After the joint movement is completed, the fingers and hand are sewn to the inner part of the flexor tendon, the ulnar nerve is transferred to the front side of the joint. Then, the axis of rotation of the elbow joint is carried out through the drill perpendicular to the hinge–distraction apparatus from the center. The ends of the keg are pulled out of the skin, and the skin is moved away by 10-15 cm before sewing, then placed in a polyethylene drainage groove (tube) with a diameter of 1.5 mm. The skin is sewn in layers, and a hinge-distraction device is installed. Articular surfaces are given a diastasis of 0.5-1 mm with the help of hardware, the joint is kept in an average physiological state for 8-10 days with the help of a bending-writing apparatus, then passive and active movements are performed.

As an example. Patient N., 22 years old, is injured during sports training. The patient's right shoulder squeezes the inner tubercle and the joint has a fracture. They come to our hospital in 3.5 months. The amplitude of movement in the joint is 30 degrees

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(bending to 90 degrees, recording 120 degrees), rotational movements are sharply limited (75 degrees). The patient underwent arthrolysis of the right elbow joint in the anesthesia chamber and removal of the compressed internal tubercle and the articular distraction apparatus of Volkov–Oganesyan is installed. A diastasis of 1 mm was established on the surface of the joints. After 8 days, passive movements were given with the help of the device, gradually increasing the amplitude of the joint with active movements. In the period after the operation, the patient received oxygenovitominotherapy. Flexion in the right elbow joint during examination of the patient after 3 years when writing 60 degrees is 170 degrees, rotational movements are completed, there is no pain in the joint during physical work.

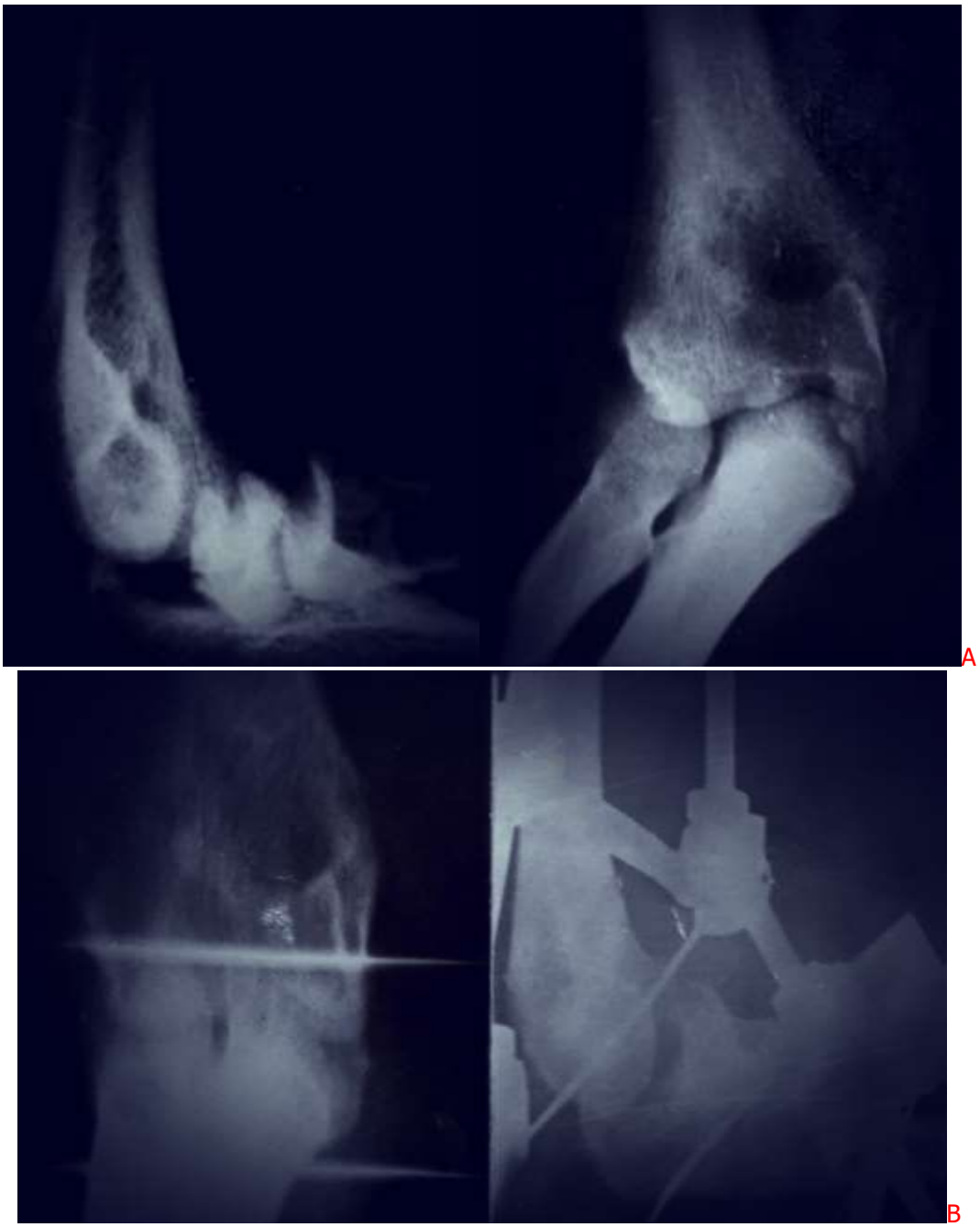

Image.1. Patient N., 22 years old, X-ray image of the right elbow joint. a) the fact that the internal tubercle shrinks into a compound after 3.5 months from the breakage. b) arthrolysis and the use of articular distraction apparatus after surgery.

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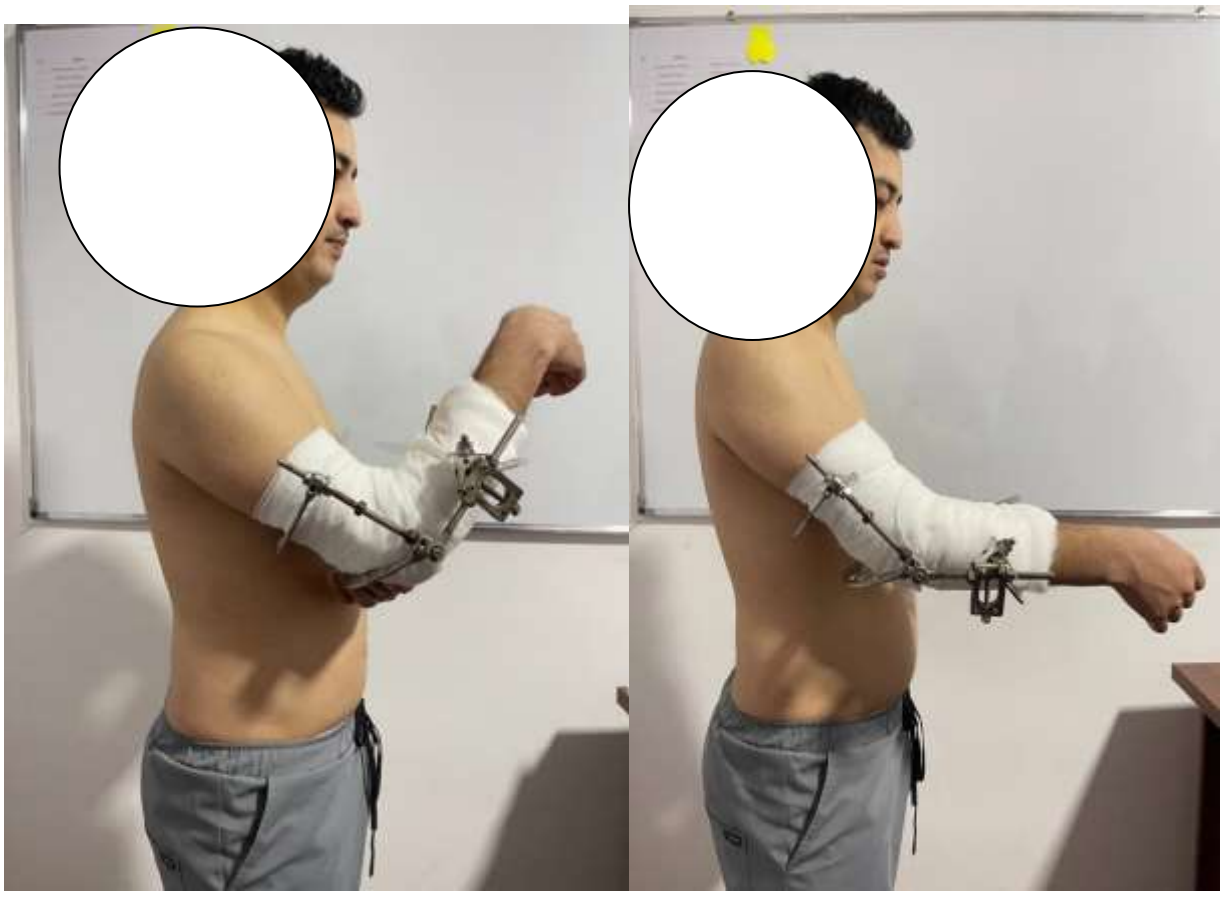

A

B

Figure 2. Patient N., 28 years old. Photo and X-ray

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a) a photograph of the patient after surgery
b) An X-ray of the right elbow joint after 3 years of surgery, the articular surfaces are in order, their congruence has been restored, the joint gap is of medium width

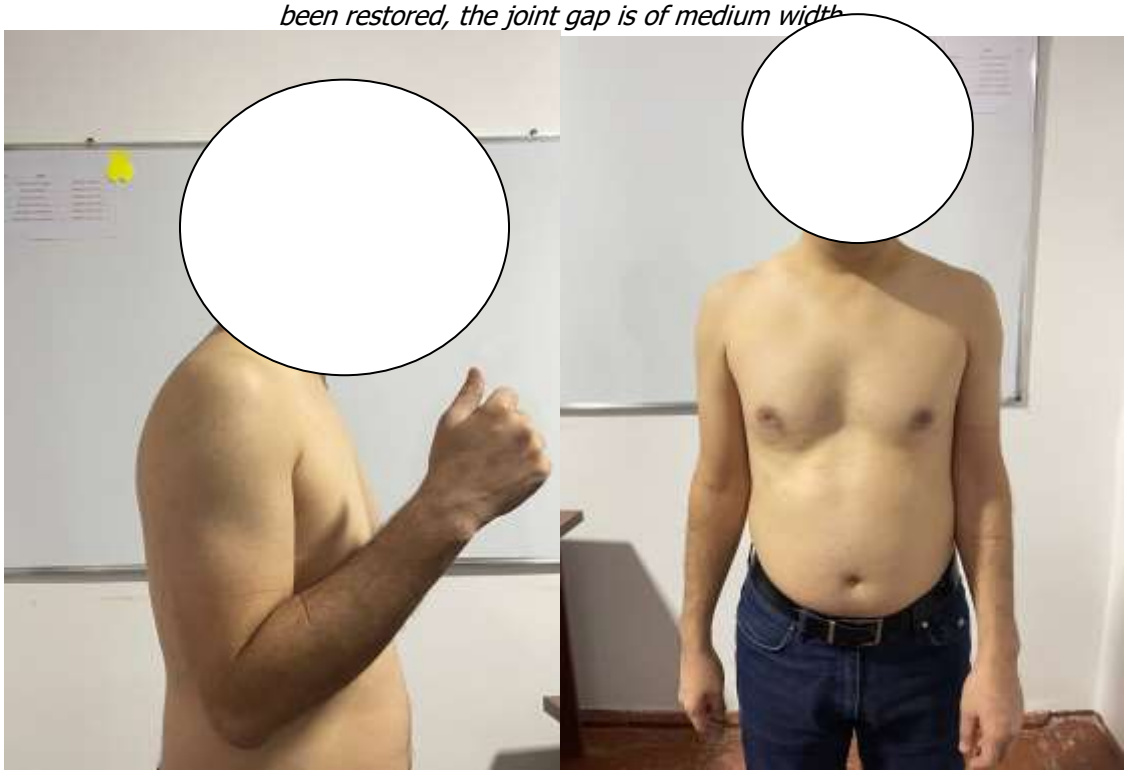

Photo-3. Patient N., 28 years old.Functional work after 3 years after surgery.

Indications for arthroplasty of the elbow joint are not only clinical signs of ankylosis and contracture, but also a macroscopic picture of the articular surfaces, deformity clearly visible during surgery, distal part of the humerus, the head of the articular surface or the wrong end of the articular surface, there are degenerative-dystrophic changes in the fracture

Operational style. The back part is inserted into the joint according to the Langenbeck method, that is, from the middle end of the shoulder to the upper end of the forearm from the inside of the elbow protrusion, the joint is opened. After the incision of the skin and subcutaneous fat, the ulnar nerve is opened and taken into a rubberized "clamp". The triceps muscle mobilizes to the protrusion of the elbow, where its tendon is attached. The articular sac is cut around the elbow protrusion and partially cut off. The end of the humerus joint is separated from under the bone curtain to the tubercles, and the articular surfaces are pushed out of the wound, in the case of bone ankylosis, the bone is cut off from the anterior articular gap using a beehive dolate. The surfaces of the joints are processed. We carry out processing on a semi-cylindrical milling machine. After processing and cleaning, we perform passive actions by installing the connecting surfaces in place. Then, with the help of a drill, the axial spoke of the hinge-distraction apparatus is carried out perpendicular to the axis of rotation in the elbow joint to the center of the humerus block. The ends of the spokes are brought out through the skin. Before closing the wound, a polyethylene drainage tube with a length of 10-15 cm and a diameter of 1.5 mm is inserted into the joint cavity. The purpose of the tube will be discussed a little later. The wound is sutured in layers and a hinge-distraction device is applied according to the method described above with the creation of a diastasis between the articular surfaces of no more than 0.5- 1 mm. Then the device is closed using the flexor-extensor device in the average physiological position of the forearm for a period of 8-10 days. At the end of this period, patients perform passive and then active movements in the elbow joint.

As an example. Patient Ya., 43 years old, came to our hospital with fibrotic ankylosis of the left elbow joint. The patient receives a bruise as a result of a fall from a height, is being treated by a doctor. The left elbow joint underwent arthroplasty and surgery to install the Volkov–Oganesyan articular distraction apparatus. During the operation, the articular surfaces are completely covered with fibrous tissue, in some places symptoms of subchondral ossification appear. The surfaces of the joint were treated, and the recess of the elbow was cleaned, and the bending of the joint during bending and writing movements during the operation was increased to 70 degrees, and when

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writing - to 170 degrees. The crack in the joint is fixed at an angle of 90 to the bending-writing joint by 1 mm. The device was removed after 2.5 months. The patient underwent oxygen therapy, vitamin therapy in the joint during the period after surgery.

When the patient was examined after 3 years, the speed of movement in the joint reached 80 degrees, flexion - 80 degrees, writing - 160 degrees, rotational movements were limited (75 degrees), stability in the lateral position of the head was not disturbed.

Photo-4. Patient Ya., 23 years old. X-rays

A. The surfaces of the joints are deformed.
B. After the construction of Arthroplasty and the use of the Volkov-Oganesyan articular distraction apparatus.

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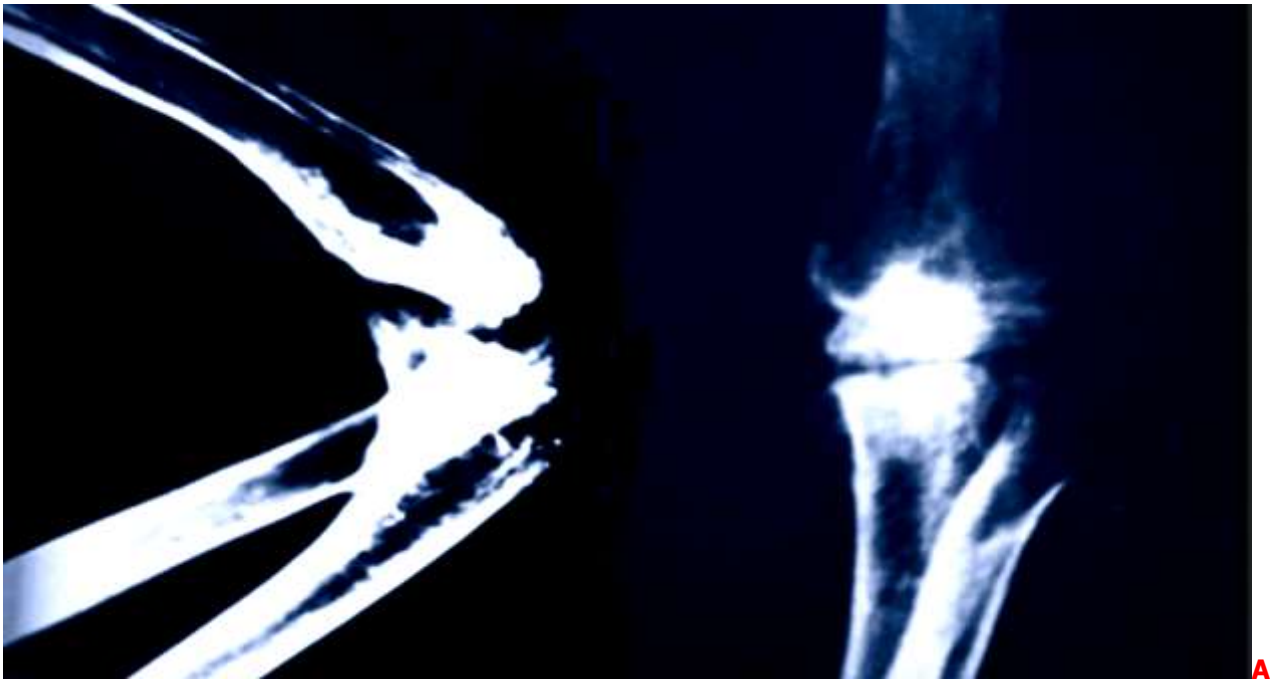
A

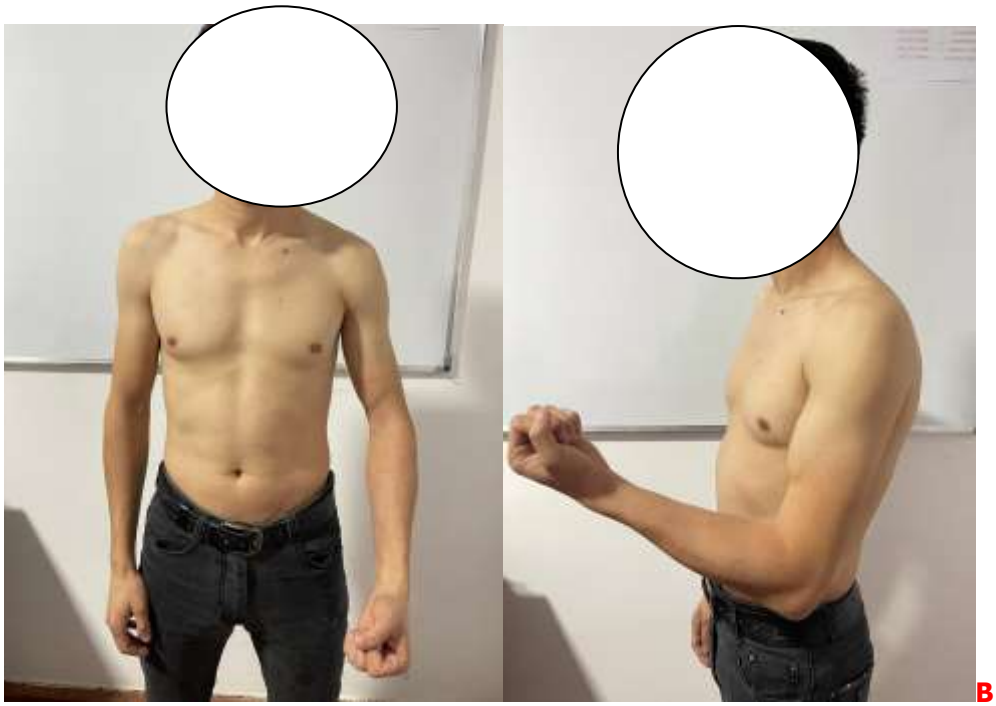
B

Photo-5. Patient Ya., 23 years old. X-rays 3 years after surgery A. Joint surfaces are fine, articular light is visible, slightly deformed. B. Joint function

IN CONCLUSION, it should be noted that the frequency of contractures and ankylosis in the elbow joint in 37 examined patients was caused by severe trauma. From the causes that directly hinder the movement of the joint, a bandage of fibrous tissue in the joint sac, paraarthecular ossification, displacement of bone fractures in intra-articular and pre-articular fractures, compression of bone fragments into the joint. Restriction of movements in the main elbow joint, open or closed, the Volkov-Oganesyan articular distraction apparatus helped to restore, start early movement of the articular gap with a diastasis of 0.1-1 mm, in order to improve intra-articular contact, as well as to improve metabolic processes, the introduction of

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oxygen, vitamin "B" group, hyaluronic acid in joint, gave good indicators.

Our comprehensive restorative continuation, which was used in the treatment of severe dislocations of the elbow joint, can be performed in special traumatology and orthopedic practice.

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