The surgical treatment of 63 patients (41 men, 22 women) with the consequences of treatment of fractures and nonunions of the distal humerus were analyzed. The average age of patients was 48.4 ± 15.6 years.

All patients had been operated previously, but due to various reasons, consolidation of the distal humerus did not occur. Patients were hospitalized in 6.8 ± 5.4 months after injury. During clinical investigation all patients had pathological mobility at the level of nonunion, movements in the elbow joint were significantly limited.

Case 1
Nonunion of the distal humerus after incorrect osteosynthesis at the previous stages of treatment.

In 17 cases, the treatment of patients began with the skin defects substitution at the level of the elbow joint.

Case 2
Gunshot multifragmental fracture of the distal humerus, defect of olecranon. Neuropathy of the ulnar and radial nerves. Soft tissue defect of the elbow. 2 months after the injury.

1st stage of surgical treatment. Replacement of the elbow soft tissues defect by the vascularized radial forearm flap.

Incorrect consolidation of the distal humerus. 4 months after the injury.

Reconstruction and osteosynthesis of the distal humerus with bone autograft. Radial and ulnar nerves neurolysis was performed.

The next stage is planed – olecranon reconstruction (bone autograft and osteosynthesis).

Case 3

The wound debridement and latissimus dorsi vascularized flap transplantation

Stages of osteosynthesis

Osteosynthesis and olecranon reconstruction

Wrist arthrodesis due to poor function of forearm muscles.

Elbow function

Osteosynthesis with bone plastics and mobilization surgeries in cases of severe injuries of distal humerus allowed to obtain good results of treatment in 79.4% of cases and satisfactory results - in 21.6% of cases.
The main factor limiting the ability to renew movements in the elbow joint was the degree of preservation of the shape of the articular surfaces of the distal humerus.