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Titel
Characteristic of structure and causes of limb amputation in soldiers suffered of the war conflict in the East of Ukraine

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Zusammenfassung
To study the main damage factors, causes and structure of limb amputations in the injured in the war conflict in the East of Ukraine

Einführung
The hybrid war of Russia against Ukraine has been started in certain districts of Donetsk and Luhansk oblasts within
the Donbas area in 2014. The application of modern weapons against Armed Forces of Ukraines during the hybrid war is resulted in amputations of upper and lower extremities among the military personnel. Aim of the study was to evaluate the frequency of amputations and to identify injury factors causing the limbs amputations.

Methodik
It has been analyzed 191 cases of limb amputations in 159 injured in war operation in the East of Ukraine during the period from 01.06.2014 to 30.06.2016. The mean age of patients was 33.04±1.15 years (range 18.9 to 60.3). There were 158 (99.4%) males and 1 (0.6%) female. The mean term of military service at the moment of injury was 1.97±0.41 years (range 11 days to 25.2 years).

Ergebnisse
It has been performed amputation of one limb in 130 (81.8%) injured, amputation of two limbs in 27 (17.0%) patients and in 2 (1.2%) injured has been performed simultaneous amputations of three and four limbs, respectively. In total for the upper limb, it has been performed 18 (29.0%) amputations of the shoulder segment, 25 (40.3%) amputations of the forearm segment and 19 (30.7%) amputations of the carpal segment. Accordingly, for the low limb, it has been

performed 55 (42.6%) amputations of the femoral segment, 53 (41.1%) amputations of the ankle segment and 21 (16.3%) amputations of the foot segment. In 140 (73.3%) cases, the reason of limb amputation was mine-explosive injury that had most often caused traumatic limb evulsion (93; 66.4%), massive regions of primary necrosis of limb tissues (20; 14.3%), main vessel injury (16; 11.4%), traumatic crushing of the extremity (5; 3.6%). In 16 (8.4%) cases, multiple shrapnel wounds were the main cause of limb loss; these wounds had caused main vessel injuries, or massive areas of traumatic soft tissue damage. In 15 (7.9%) patients, limb amputations have been performed because of extremity's frostbit injuries; in 11 (5.8%) cases - bullet gunshot wounds; in 4 (2,1%) cases - explosive behind-armor injuries; in 3 (1.6%) cases - a train accident with traumatic limb avulsion; in 2 (1.0%) cases - injuries caused of collapse of concrete constructions.

Schlußfolgerung

In the modern combat conflict, limb amputation was determined by both combat (88.5%) and non-combatant damaging factors (9.4%). The causes of limb amputation in most cases (69.1%) were associated with the simultaneous occurrence of severe irreversible changes in it, in which the limb loss was inevitable. On the other hand, in 28.8% of cases limb amputation was carried out as a result of gradual formation of irreversible pathological changes in the extremity, in which there was a potential opportunity to prevent limb amputation (or amputation level) by improving of organizational-tactical activity and medical-evacuation actions.

Literaturreferenzen

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