CONSIDERATIONS ON THE ISSUE OF COMBINED INJURIES

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Combined trauma is still a major problem with which traumatologists, surgeons and neurosurgeons are confronted. In time of peace, this particular trauma is very serious, and parallel to the development of mechanization processes and transport means, its incidence is steadily increasing (Petrumenko — 3, Ravenko — 11, Rozhinskii — 12, Yazjikov — 17).

Patients with combined injuries are being referred from one to another specialist since their medical attendance is a difficult and very responsible task (Kabanov — 8, Ravenko — 11, Rozhinskii — 12, Sokov — 13, Poberezhnii — 10).

In the last few years, the combined injury has been considered as one of the chief causes for illness and incapacitation, reaching up to 10 per cent of the total morbidity rate of the population (18.20 per cent).

Over the period 1969 through 1973, a total of 552 patients with multiple injuries underwent treatment at the surgical department of the Medical Faculty — Varna. Most of them — 345 (62.50 per cent) — were the victims of traffic accidents. The highest number of patients were admitted during the summer season, when Varna and its region are being visited by large numbers of holiday makers and tourists. The incidence of occupational injuries, and of home injuries as well is much lower, 122 (22,1 per cent) and 85 (15,3 per cent) respectively. Our data are very close to those reported by Babalich (1), Baturin (2), Bogdanov (3), Boychev (4,5), Ravenko (11), Feygin (14), Shalimov (16).

Distribution according to occupations shows that the most numerous group is represented by patients engaged in industrial enterprises, followed by agricultural workers, clerks, building workers, pupils, pensioners and housewives.

The male sex is the most frequently affected — 382 (65 per cent). Female patients amount to 170 (34 per cent). The patients living in urban areas amount to 331 (59,96 per cent), and in rural areas — 221 (40,04 per cent).

Patients aged 20 to 60 years prevail, that is, the age of highest working ability efficiency. The percentage of combined injuries among children is considerable — 15,43 per cent — being mainly of street-traffic nature.

A favourable condition contributing to the efficiency of treatment of this category of patients is their timely transportation to the hospital unit. Analysis of the case material shows that 65,60 per cent of the patients have been transferred to the hospital within two hours of injury, 28,37 per cent — within 2 to 6 hours, and a very small number (6.04 per cent) — within 6 to 12 hours. In 136 patients (24.65 per cent), the primary trauma involved the femoral region — mainly femoral fracture. When combined with concomitant

lesions, it almost invariably led to a heavy general condition, aggravating the prognosis and complicating the reposition of bone fragments (Boychev — 4,5, Dobrev — 6, Petrumenko — 9, Ravenko — 11, Rozhenskii — 12). The basic injury affected the lower limb in 273 patients, the upper limb — in 87, pelvis — in 70, thoracic cage — in 65, spine — in 40, and abdomen — in 17 patients (see Table).

Table

Distribution of Patients by Years and Localization of the Basic Injury

Year	Lower limb	Upper limb	Pelvis	Thoracic cage	Other	Total
1969	40	14	10	4	14	82
1970	44	15	10	12	17	92
1971	50	18	14	15	18	115
1972	52	20	18	18	22	130
1973	51	2	18	16	22	127
Total	237	87	70	65	93	552

Brain injury which was the basic affection and required skull trepanation in three instances, was present in 132 patients (23.91 per cent). In the latter cases, the state of impaired conscience was protracted, and often caused delayed performance of the radical surgical interventions indicated in fractures and displacements of the fragments, injuries of the abdomen and other organs (Petrumenko — 9, Ravenko — 11, Tzjibulyak — 15).

Upon admission, 68 patients were in the state of shock (12.32 per cent). Usually, it was a matter of injury of the thorax, abdomen, pelvis, femur etc, in various combinations between each other. We adopted invariably an active treatment policy, i. e. energetic struggle against the shock, and in case of adequate indications — timely undertaking of the necessary life-salvaging intervention.

In the series under review, totalling 552 cases, the number of injuries ranged from two to seven. With two injuries were 237 (49.93 per cent) patients, with three — 224 (40.57 per cent), with four — 72 (13.04 per cent), with five — 15 (2.71 per cent) and with more than five concomitant lesions — four patients. Open fractures were sustained by 87 patients (15.60 per cent), which was the reason for rather prolonged average hospitalization period in these cases — 20 days per patient.

Nowadays, 80—90 per cent of the open fractures heal thanks to the complex therapy secured. In part of these patients internal fixation using metal osteosynthesis has greatly contributed to the favourable outcome, even when performed as a stage of the surgical management. Nevertheless, conservative treatment (cast immobilization, traction), applied to a total of 274 patients (49.63 per cent), prevailed. Operative treatment was resorted to in 278 cases. Of them, 198 were operated on because of injuries to the extremities. Laparotomy was performed in 80 cases, splenectomy — 7, suture of the liver — 3, suture of the intestine and stomach — 3 and intestinal resection — three.

The patients where abdominal injury was the basic trauma and surgery was mandatory were assigned to the group of heaviest cases. In the latter the mortality rate was the highest. Cases with thoracic injury as the basic trauma

amounted to sixty five. It was a matter of varying in degree impairment of the costal integrity and injury to the lungs. Whenever the latter injuries were associated with abdominal, craniocerebral or femoral trauma, the patients were admitted in a heavy condition, and in some instance it was difficult to overcome the shock condition. Three of them died within 12 hours of admission, and one — three days thereafter.

The patient I. R. A., aged 16 with case record № 1565/9. 7. 1968, merits special attention. He was admitted as an emergency case in a heavy shock state as the result of transport accident. Clinical examination data: blood pressure — zero, pulse — filiform, fracture of nine ribs on the right side (II—X), well pronounced subcutaneous emphysema involving the neck, the right halves of chest and abdomen, right clavicular fracture, and rightside pulmonary lesion. Following short-lasting energetic resuscitation, thoracotomy was performed in the right VI intercostal space. Evacuation of 1000 cc blood from the pleural cavity. First and second segments were with ruptured segmental vessels and bronchi. The vessels were bleeding profusely. Both segments were removed. The patient ran an uneventful postoperative course under conditions of energetic resuscitation and antibiotic treatment. After 22 days he was discharged healthy. On the follow-up examination one year later, he was in excellent condition.

Twenty one patients developed complications of which shock — 6 cases, peritonitis — 5, pulmonary artery embolism — 1, myocardial infraction — 1, urosepsis — 1, and suppuration of the operative wound — seven. The treatment of the patients lasted from 40 minutes to 92 days. Mean hospitalization period — 21 days.

Out of the total number of 552 patients, eight died (3.2 per cent); their condition upon admission was estimated as very heavy. The condition of the patients with thoraco-abdominal injuries was the gravest. In most cases the lethal outcome occurred within the first hours of admission. Usually, it was a matter of simultaneous injury to several organs: lung, liver, spleen, stomach, pancreas and intestine.

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К ВОПРОСУ О КОМБИНИРОВАННЫХ ТРАВМАХ

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РЕЗЮМЕ

Авторы дают интерпретацию комбинированных травм на 552 больных и считают, что вопрос об этом виде травм полностью не решен. Для правильного и эффективного обслуживания таких больных необходимо одновременное участие ряда специалистов. Преобладают больные с ведущей травмой бедра. Наиболее тяжело протекают торако-абдоминальные ранения, особенно если они комбинируются с мозговой травмой. Последние затрудняют диагностику и лечение. Делается вывод о необходимости индивидуального подхода в зависимости от характера и тяжести травмы и более активных мер при шоковом состоянии больных.