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## ҚАДРЛИ ҲАМКАСБЛАР!

Маълумки, Ўзбекистонда ёшларга оид сиёсатга катта эътибор қаратилмоқда, айниқса, сўнгги йилларда Президентимиз ва ҳукуматимизнинг қатор меъёрий-хуқуқий хужжатлари қабул қилиниб, ёшларнинг илм-маърифат эгаллаши, меҳнат фаолияти ва бўш вақтини мазмунли ўтказиши учун кўпгина шарт-шароит яратишга хизмат қилмоқда.

Таклиф этилаётган «**MedUnion**» илмий-амалий журнали ёш олимлар, магистрлар, клиник ординаторлар, докторантлар, мустақил изланувчилар ва талабалар учун профессионал мулоқот майдони бўлиб хизмат қилади. Журнал электрон шаклда нашр этилади, чунки ушбу формат бир қатор афзалликларга эга: нашр этилган материаллар ҳажмига чекловлар олиб ташланади, муаллифдан ўкувчига бўлган йўл сезиларли даражада қисқаради, бу бизнинг динамик замонамизда жуда аҳамиятли, шунингдек ҳаражатлар ҳам анча камайтирилади. Ҳар бир мақолага оригинал ДОИ рақами берилади.

Ушбу электрон илмий журналнинг мақсадлари:

- стоматология, умумий клиник, фундаментал фанлар, шунингдек, тиббиётда педагогика ва психология соҳасидаги замонавий тадқиқотларни ёритиш.
- ёш олимларнинг интеграциялашуви ва ушбу фанларнинг илмий ва амалиётчи мутахассислари ўртасидаги яқин ҳамкорлик.
- академик анъаналар давомийлигини сақлаш, илмий-педагогик кадрларни тарбиялаш.

Журналда ўзбек, рус ва инглиз тилларида ёш олимлар диссертацияларининг оригинал эмпирик тадқиқотлари ва умумий илмий-назарий мақолалар чоп этилади. Ишонаманки, ушбу журнал ҳақиқий мунозара майдонига айланади, илмий мулоқотни таъминлашга ёрдам беради, шунингдек, тиббиёт соҳасида янги илмий ва педагогик кадрларни тарбиялашга ўз хиссасини қўшади. Сизни ушбу лойиҳада турли материаллар муаллифи ва шарҳловчи сифатида иштирок этишга таклиф қиласиз.

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## SPLEEN INJURIES DURING BLUNT TRAUMA OF THE ABDOMINAL

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### **Хулоса**

Тирик одамларда қорин бўшлиғининг тўмтоқ шикастланишида талоқнинг шикастланиши табиати тўмтоқ қаттиқ жисмларнинг шикаст юзасига боғлиқ, шунинг учун чекланган сирт билан шикастланишдан кўра чексиз сирт билан шикастланиш билан янада жиддий шикастланиш кузатилади. Улар тўмтоқ нарса билан бевосита алоқа қилиш жойида ҳам, масофада ҳам ҳосил бўлади.

**Калит сўзлар:** тўмтоқ травма, талоқ, жароҳатлар

### **Резюме**

Характер повреждения селезенки при тупой травме брюшной полости у живых людей зависит от травмирующей поверхности тупых твердых предметов, поэтому более серьезные повреждения наблюдаются при травме с неограниченной поверхностью, чем при травме с ограниченной поверхностью. Они образуются как в месте непосредственного контакта с тупым предметом, так и на расстоянии.

**Ключевые слова:** тупая травма, селезенка, повреждения

### **Summary.**

The nature of damage to the spleen in blunt abdominal trauma in living individuals depends on the traumatic surface of blunt solid objects, so more severe damage is observed with an injury with an unlimited surface than with an injury with a limited surface. They are formed both in the place of direct contact with a blunt object, and at a distance.

**Keywords:** blunt trauma, spleen, injuries

**Relevance.** One of the urgent problems in forensic medicine is the development of criteria for the forensic medical assessment of injuries to the internal organs of the abdomen with blunt objects [1,2,3]. The anatomical and topographic features of the spleen create certain prerequisites for its frequent injury when blunt objects act on the chest and abdomen. The incidence of spleen injuries in clinical and expert practice, according to the literature, ranges from 17.5 to 33.3% [3,4,5].

Studying the literature data, we came to the conclusion that, despite the fact that certain criteria for forensic diagnostics of the mechanism of injury by injuries have been obtained to date, there are no clear and definite criteria for injuries of the spleen in living individuals [6,7,8]. Apparently, such an attitude to the current situation must be explained by the insufficiency of the studied problem. [9,10].

Nevertheless, in forensic practice, to establish the fact of injury to the abdominal

organs and retroperitoneal space, subjective data are still often used, not supported by any instrumental studies. All of the above indicates the need to develop new diagnostic methods, in particular, with the use of echographic studies.

Purpose of the study : to study the features of bodily injuries in case of injuries of the spleen with a blunt object using ultrasound diagnostics and their forensic medical assessment.

Material and methods of research : 16773 expert opinions from the archive of the "Bureau of Forensic Medical Examination" in Tashkent in the period from 2007 to 2011 were analyzed. Of the total number of expert opinions, it was found that blunt abdominal trauma was recorded in 417 cases (2.5%). For a more detailed analysis, 176 case histories were analyzed. The average age of the victims was  $28.5 \pm 3.5$  years, the variation range varied from 17 to 68 years.

Among 593 patients, according to the generally accepted classification, we identified the following types of injuries: 1. Damage to the anterior abdominal wall - 356 (60%); 2. Damage to parenchymal organs - 202 (34.1%); 3. Damage to hollow organs - 35 (5.9%). According to our data, spleen injuries occurred in 6.7% of the total number of victims with blunt abdominal trauma, while among injuries of parenchymal organs, this figure is 19.8%.

When studying the circumstances of the injury, we found that in 21 (52.5%) victims injuries were observed in traffic accidents , 9 (22.5%) - in beatings , 10 (25%) - in a fall from a height . Isolated injuries of the spleen occurred in 35 cases, which accounted for 87.5%, in other cases, combined injuries of internal organs were recorded in the form of ruptures of the kidney, small intestine and liver. All patients with spleen injuries underwent ultrasound examinations.

Results of the study : Injuries to the spleen from impact with blunt objects with a limited surface (mainly a fist or leg) often occur from the impact of a traumatic force on those parts of the body that are in the projection of the spleen: the epigastric region, the left hypochondrium, the left lateral surface of the lower chest and abdomen , lumbar region on the left. We recorded this type of injury in 42.5% (17 cases). So we found that when a blunt object is struck in the region of the left hypochondrium, it acts through the abdominal wall on the lower edge of the spleen (52.9%).

In a gift from front to back and from right to left, it leads to a displacement of the spleen backwards and to the left. In this case, the diaphragmatic surface of the spleen is usually not damaged (only in 11.8% of cases from a blow of considerable force caused with high acceleration, damage can occur at the point of direct contact of the damaging surface of a blunt object with the spleen). This is due to the fact that the spleen tissue is less resistant to overstretching. A typical mechanism in these cases is a sharp displacement of the spleen with overstretching of its ligaments (more often, the splenic-gastric ligament), which restrict the movement of the spleen. Due to the fact that the strength of the ligaments of the spleen is higher than the strength of its capsule and parenchyma, at the place of attachment of the ligaments (where the maximum stretching of the capsule occurs), subcapsular hemorrhages and ruptures of the capsule and parenchyma are formed (2 cases, 11.8%) - in the area of the gate (1 case) and on the visceral surface of the spleen (1 case) of a linear shape. The breaks are mostly transverse (4 cases) or oblique (13 cases) in direction. In 1 case (5.9%) it continues on the diaphragmatic surface of the spleen.

From a blow of great force, the sprain is transmitted to the trabeculae of the spleen, as a result of which the ruptures spread along their course deep into the organ, which was observed in 41.2%. In these cases, hemorrhages are formed in the ligaments of the spleen near the place of their attachment to the organ. The number of gaps in the gate area from 1 to 3, which connect in the gate area and diverge in the radial direction.

A local impact on the left lateral surface of the lower chest and abdomen is accompanied by direct trauma to the diaphragmatic surface of the spleen adjacent to the indicated parts of the body, where tissue compression occurs, which occurred in 8 victims (47.1%). At the moment of injury, the tissue on the opposite surface of the spleen (visceral) experiences a tensile strain, resulting in the formation of additional local or more widespread tears in the area of the hilum of the spleen. In this case, the localization of the impact of a blunt object is important, because a perpendicular blow to the mid-axillary line is not accompanied by lateral displacements of the spleen, and an anterior or posterior displacement of the impact site leads to displacement of the spleen with tension of the ligaments that limit the movement of the spleen, resulting in ruptures in the area of the gate and hemorrhage in the ligamentous apparatus.

When hit with a blunt object with a limited surface on the lateral surface of the body (along the mid-axillary lines), 75% is accompanied by damage to the visceral surface and due to the fact that the spleen tissue is less resistant to stretching, which is noted on the opposite surface of the impact spleen.

The impact of blunt objects with an unlimited surface in our study was observed in 23 cases, which amounted to 57.5%. In 73.9%

of cases (17 victims) it was accompanied by a blow to the body of great force, 13 of them were a transport injury.

An analysis of the nature of injuries to the spleen showed that more severe injuries are observed in trauma with blunt objects with an unrestricted surface than in trauma with a limited surface. They are formed both in the place of direct contact with a blunt object, and at a distance.

When hit in the epigastric region or the left hypochondrium (16 cases - 69.6%, a blunt object (through the abdominal wall) acts on the lower edge of the spleen, as a result, it rotates and shifts in the direction of the traumatic force. From overstretching of the ligaments at the place of their attachment to the spleen, subcapsular hemorrhages are formed (4 cases, 17.4%) in the region of the gate, ruptures of the capsule and parenchyma of various lengths, in 2 cases passing to the diaphragmatic surface of the spleen, hemorrhages in the ligaments and their ruptures.

From a blow to the left lateral surface of the body, according to the data obtained (5 victims), extensive slit-like ruptures are formed, penetrating to a considerable depth of the organ (up to 3.5 cm), with elements of crushing of the edges of the ruptures; hemorrhages and ruptures in the area of the gate.

Multiple ruptures of the spleen on its visceral and diaphragmatic surfaces are formed from a blow of great force with a blunt object on the lumbar region on the left, which were observed in 2 cases. At the same time, the spleen injury was combined with ruptures of the left kidney, massive hemorrhages in the retroperitoneal and perirenal tissue, with fractures IX - XI ribs on the left.

The next stage of our work was the study of damage to the spleen when falling from a height, which occurred among 10 victims. In

the majority (80%) of the cases we studied, the predominant mechanism for the formation of damage to the spleen was concussion of the body, without direct impact of the traumatic object on the spleen. In these cases, the study of the spleen in 2 victims revealed subcapsular hemorrhages with subsequent rupture of the capsule in the area of the gate, more often in severity and volume inadequate to the general trauma of the body. Patients applied at different periods of time after injury (from 7 to 30 days). When falling from a height in persons without a fatal outcome, breaks of varying severity are formed on the diaphragmatic surface of the spleen (hit by the left side surface of the body), on the visceral surface, or multiple cracks on both surfaces of the spleen, randomly located, usually superficial (due to the hydrodynamic effect).

According to the conclusions of forensic medical experts, among this category of victims, in all cases, bodily injuries on the

basis of danger to life were assessed as serious bodily injuries.

Thus, according to the obtained data, ruptures of the spleen with subsequent splenectomy occur in most cases with blunt force trauma. In 22.5%, subcapsular hematomas are observed, of which in 77.7% with subsequent rupture of the capsule at different times after injury.

#### **Conclusions:**

1. With a blunt object injury, in most cases there are ruptures of the spleen, followed by splenectomy. In 22.5%, subcapsular hematomas are observed, of which in 77.7% with subsequent rupture of the capsule at different times after injury.
2. The nature of damage to the spleen in blunt abdominal trauma in living individuals depends on the traumatic surface of blunt solid objects, so more severe damage was observed with an injury with an unlimited surface than with an injury with a limited surface. They are formed both in the place of direct contact with a blunt object, and at a distance.

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