



## Criteria for Choosing the Treatment and Diagnosis of Chest Joint Injuries in Pediatric Practice

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**Abstract:** 63 children with chest injuries of varying severity and localization were admitted to the Center for Pediatric Surgery of SamMU for the period 1996-2022. There were 39 children with combined chest injury. Thoracotomy was performed on 8 children, 22 underwent video thoracoscopic surgical interventions. The age ranged from 3 to 15 years. A retrospective analysis of the treatment of 39 children with combined injuries was carried out. The patients were divided into 4 groups according to the severity of shock according to the Algover classification. As a result of a retrospective analysis of the use of various surgical approaches, the severity of the existing injuries and the possibility of their elimination, it was shown that the Algover shock index allows fairly objectively predicting the possibility of performing therapeutic VTS in children with combined chest injury and is directly correlated with the probability of BBTRISS survival, which correlate with the degree of shock and existing injuries in the patient.

**Key words:** videothoracoscopy, combined chest injury, shock index, pediatric surgery, children.

Introduction. The chest wall is made up of bones, cartilage, ligaments and tendons and is covered with muscles and soft tissue. The chest wall is designed specifically to protect the organs it surrounds and to support breathing. When breathing, the chest wall expands and contracts during inhalation and exhalation. The ribs and their connections to the sternum at the front and the spine at the back contribute to this by moving up and down in a certain way, which is called the "bucket handle" and "pump handle" movements. These movements are made possible by the connections of the ribs, especially the true ribs (vertebral-sternal ribs) to the vertebrae (rib-vertebral and rib-transverse

joints) and, to a lesser extent, to the sternum (rib-sternal joints). Today, the treatment and diagnosis of mixed chest injuries in children has been one of the pressing problems in emergency pediatric surgery. Then it is complicated to adequately assess the weight level of the chest organs in polygynous cases.

**Purpose of verification.** Predicting the possibility of applying VTS in case of a chest injury using the Algover shock index.

**Research objective.** The use of VTS in cases of severe degree shock of chest injury with retrospective and SIA Index assessment of hemodynamic indicators.

**Materials and methods** 63 patient children at the Samarkand children's surgical scientific center were isolated in 1996-2022 and were diagnosed with joint chest injuries. Diagnostic puncture of the pleural cavity, VTS, torocotomy was performed in Bos under 16 years of age.

By type of injury; 29 patients (46%) are characterized by road-traffic trauma, 21 patients (33.3%) are characterized by falls from a height, chest - thirsty-bruised injuries -13 (20.7%) and 39 (61.9) are characterized by mixed injuries. (Table 1).

#### Division of patients with a mixed injury option

Mixed injury option	Number
Chest + BMJ	12(30,8%)
Chest + arm, leg injuries	14(35,9%)
Chest + BMJ+ arm-leg injury+spine injury	6(15,4%)
Chest + BMJ+ arm-leg injury+spine injury+abdominal injury	3(7,7%)
Chest + ankle-arm injury+spine injury	1 (2,5%)
Chest + abdominal injury+ limb injury	3 (7,7%)
Total	39 (100%)

Mixed injuries bilain from 39 patients with cranial injuries were observed in 21 (43%) patients. In 24 patients, however, joint injuries were observed with limb injuries with abdominal injuries.

33,952.4%) the patient had treatment - diagnostic treatment-the puncture was limited to puncture of the pleural space, the remaining 47.6% had interpleural continuous bleeding and 8 patients had toracotomy and 22 patients had VTS practice (Table 2).

Table 2

#### Thoracotomy diagnosed at intra-thoracic injuries

Intra-thoracic injury	N=8
Lung injury (pricked-cut injury)	2
Intercostal artery injury	2
Lung injury with bone fragments	1
Lung Pasky part injury	1
Pulmonary parinchema hernia	2

Table 3

#### Intra-thoracic injuries detected in diagnostic viditorocoscopy

Intra-thoracic injury	N=22
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Lung injury (pricked-cut injury)	4
Pneumatoroxus (visceral pleura tear preserved pulmonary parinchema butyny)	6
Iodine body in the pleural cavity and pulmonary parinchema	1
Intercostal artery injury	2
Pulmonary vein injury	1
Lung bottom rupture	1
Lat eating of the lungs intraparenchymatous blood transfusion	2
Pulmonary parinchema tear	3

The implementation of the VTs practice in chest joint injuries was carried out in 39 (61%) patients on the basis of a retrospective assessment of the hemodynamic indicators of patients with chest injuries.

In the misery of patients, it was found that there was a potential predisposition to VTS in the case when we used the ISS anatomical criterion, the RTS physiological criterion [8], the Triss physiological indicator [9], the BBTRISS coefficient for predicting the possibility of survival. The SIA- Algovera shock index-coefficient was determined by dividing the frequency of cardiac contraction by systolic pressure.

The results are predictable. Patients with Halda araplash injuries with SIA index in mind were divided by the severity of the shock. 4 indens  $SIA < 1.0$  (mild level of shock) was observed in 22 patients (73.5%) with mixed injuries. The fact that the subsequent growth of SIA indicators increases the ISS index and decreases the RTS index, the severity of anatomical injuries of patients begins to increase with physiological disorders.

Proportionately increasing blood in the pleural space from the middle hajm indicates the severity of the injury. In mixed injuries, the severity is level and the number of injuries (ISS, RTS) Sia index and BBTRISS survival opportunity have Informatic coinages. If the shock index is  $SIA < 1.0$   $BBTRISS = 0.961 \pm 0.018$ , then the chance of survival would be equal to  $96.1 \pm 1.8\%$ , while  $SIA > 2.0$   $BBTRISS = 0.452 \pm 0.012$  would be drastically reduced and remain equal to  $45.2 \pm 1.2\%$ . This is evidenced by the high level of lethality in patients of this category

It is clear that  $SIA < 1.0$  is often associated with -11 cases of pulmonary parenchyma injury, 2 cases of intercostal vascular injury, and 9 cases with injuries to the musculoskeletal system and 8 cases of bom brain injury. That is, there is no wound with a sharp intensive bleeding character. Patients with intensive blood loss were urgently zudligized to treatment institutions, and there were no severe cases of hemmoragic shock.

The  $SIA = 1.0-1.5$  injury character has the following clinical picture. Mid-level shock disorder was observed in 9 patients with intercostal artery injury. saatvetstvenna. In patients of this category, more than three marotiba of the abdominal cavity, bish brain, Tayans-kharakat system injuries, 9-10 cases were observed.

In Sia = 1.5-2.0 patients, severe shock disorder was observed in large vascular injury, massive blood loss in severe cranial injury.

SIA>2.0 (extreme shock disorder) severe cranial injury, spinal cord injuries, abdominal organs which are injured, patients with such mixed injuries are accompanied by complete lethality. To predict the possibility of using VTS for the purpose of treatment, we looked at the dependence of retrospective surgical access on the SIA index in Bo with mixed chest injuries (Table 4).

**Retrospective evaluation of the surgical approach, relying on the SIA index.**

SIA index	Number of patients (%)	Operational methods			
		treatment VTS		Thoracotomy	
		a	b	a	b
< 1,0	22 (73,5)	16	1	3	2
1,0-1,5	4 (13,3)	2	1	1	-
1,5-2.0	2 (6,6)	-	1*	1	-
>2.0	2 (6,6)	-	1*	1	-

a-elegant, b-not justified, \* - (conversion)

As can be seen from the table, the xolda chirurgical approaches that rely on the SIA index are as follows.

In Sia< 1.0 patients, retrospective taxilyl was shown to be VTS in case 16, and the operation ended endochirurgicaly. In the case of Bitu, no further treatment was performed with a VTS dating character, as an indication that the blood in the pleural space came out through a drainage tube, no new source of bleeding was observed, in addition, no pleural purulent infection was observed.

Of the 5 patients, 2 cases were toracotomized with hyperdiagnostics predominating, while vaxolanki were allowed to undergo endochirurgical treatment. The injury was not of severe character.

Retrospective analysis of patients with an index of SIA= 1.0-1.5 justified the implementation of therapeutic VTS in 2 cases. In case 1, treatment VTS ended well, while during surgery, parinchema injury of the lungs was detected, blood loss was observed during surgery, in such a case, a rapid thoracotomy route is desirable.

In patients with an index of SIA=1.5-2.0, one case of diagnostic VTS was followed by a large amount of blood in the testicular artery in the pleural cavity as a result of injury. Thoracotomy and the practice of connecting the spinal artery have been performed due to the inability of the wound site to be seen as a result of massive blood flow.

In the case of Sia>2.0 i.e. extreme shock, a diagnostic VTS was performed on a single patient, and a convention was made after blood was removed due to the injury site being visualized and the blood did not stop. In such a case, treatment VTS is inappropriate, it is imperative to make a toracotomy without stretching the time.

**Conclusion.** The use of the SIA shock index in mixed injuries of the cartilage cage in children accurately predicts it when passing the VTs practice, and shock levels of BBTRISS survivability correlate injuries in the patient.

Treatment is aimed at transferring the practice of VTS to patients with  $SIA < 1,0$ . In the retrospective taxile, this guru did not have conversii.

Sia = 1.0-1.5 25% of cases treatment VTS without foundation and a great risk endochirurgical practice without result or harm to patient chayote therefore conversion transfer is necessary if there is difficulty in VTS in such patients.

VTS to  $SIA > 1,5$  will be an indication against extensive and severe chest injuries endochirurgical operas will not give results, and such patients should be approached in an active surgical way.

### **Bibliography:**

1. Arkhipov D.M. Videothoracoscopy in the diagnosis and treatment of chest wounds: dissertation. ...kand.med.nauk. Moscow, 1999
2. Davlyatov S.B. Therapeutic tactics in open and closed injuries of thoracic cavity organs in children. Reanimatological and surgical aspects". Ekaterinburg.-2008.- P.88-89.
3. Zhestkov K.G. Mini-invasive operations at complicated closed chest trauma / Barsky B.V.// Materials of the International Conference "New technologies in military-field surgery and surgery of peacetime injuries". - SPb. 2006. - C. 75-76.
4. Isakov Y.F. Thoracoscopic and video-assisted operations on the thoracic organs in children / Stepanov E.A., Razumovskiy A.Y. // Surgery. - 2003. - №3. - C.22 - 25.
5. Safarov Zafar Faizullaevich, Hakimov Jasur Pulatovich, Akhmatalieva Mayram Akhmatalievna, Alimov Akhror Abdurasulovich Diagnostic significance of the Allover index for early detection of shock in children // Problems of Science. 2019. №5 (138).
6. Tilyakov A.B., Tilyakov H.A. Nazarov S.P. Application of minimally invasive technologies in the treatment of the musculoskeletal system in victims with polytrauma // Journal of Biomedicine and Practice Volume7, Number#2 P.335-345.
7. Allgower M. Dtsch Med Wschr. / S. Burri, A. Schock index// 1967.- 92: 43: P.1947-1950.
8. Baker S.P. The Injury Severity Score: a method for describing patients with multiple injuries and evaluating emergency care. O`Neil, W. Haddon, W.B. Long // J Trauma.- 1974.-Vol. 14.-P. 187-196.
9. Boyd C.R.. Evaluating Trauma Care: The TRISS Method Trauma Score and the Severity Score./ M.A. Tolson, W.S. Copes.// J Trauma.-1987.-No. 27.-P. 370-378.
10. Champion H.R.. A Revision of the Trauma Score./ W.J. Sasso, W.S. Copes// J Trauma.- 1989.- № 29.-P. 623-629.