SJIF Impact Factor: 5.464

WORLD JOURNAL OF ADVANCE HEALTHCARE RESEARCH

ISSN: 2457-0400
Volume: 4.
Issue: 3.
Page N. 264-266
Year: 2020

Original Article www.wjahr.com

EVALUATON OF THE EFFECTIVENESS OF MULTI-STAGE SURGICAL TACTICS FOR LIVER DAMAGE

Mustafakulov I. B.*[1], Umedov Kh. A.[2], Karabaev Kh. K.[3], Djuraeva Z. A.[4]

[1]C.M.S. Head of the Department of Surgical Diseases №. 2.
[2]Teacher of the Department of Surgical Diseases №. 2.
[3]Professor of the Department of Surgical Diseases №. 2.
[4]Lecturer of the Department of Endocrinology.

Received date: 15 April 2020 **Revised date:** 05 May 2020 **Accepted date:** 26 May 2020

***Corresponding author: Mustafakulov I. B.**

C.M.S. Head of the Department of Surgical Diseases №. 2.

ABSTRACT

The authors proposed active surgical tactics as "damage control" in traumatic liver injuries. The method of "damage control" in SFRICAN used since 2009 as the only method of saving the life of patients with traumatic injuries of the liver in the IV and V degree (for E. Moore, 1986). In the departments of emergency surgery STRNCMP 2009–2019 130 operated patients with liver trauma. Of these, 19 (14,61%) patients with severe liver injuries of IV and V degree of damage by E. Moore. The effectiveness of multi-stage tactics was evaluated by the level of mortality and the number of purulent-septic complications. The results of surgical treatment of 19 patients with massive liver injuries, aged 17 to 50 years, were analyzed. The median age was 26±2,0 years. There were 11 men and 8 women. The average assessment of the severity of damage on the ISS scale was 34 points (17-76), E. Moore IV and V degree of damage. The average blood loss was 2850 ml (1750-3850 ml). All patients underwent multi-stage laparotomy with gauze (film) tamponade, the average number of operations per 1 person 2,7 (2-5), suturing of the liver wound with tamponade (13), extensive hepatotomy and vascular ligation (3), atypical resection (2), stitching of large major vessels with taponade (1). The average bed/day in the intensive care unit is 13 (3-16), and the average bed/day in the clinic is 25 (3-28). Mortality was 26,3% (5 out of 19), mainly purulent-septic complications and multiple organ failure. Multi-stage surgical tactics "damage control" in isolated and combined severe liver damage is an effective method in unstable patients with the risk of developing coagulopathy and multiple organ failure. The use of the "damage control" technique helped to reduce the mortality rate from acute abdominal pathology by 26,3%.

KEYWORDS: Closed abdominal trauma, liver injury, "damage control".

Relevance

Traumatic liver damage and severe abdominal injuries. The frequency of liver damage with a closed injury is from 20 to 46.9%,[2,3,11,27] with penetrating wounds - from 57%, up to 86,4% of observers.[12,17,26,27] According to published data, postoperative mortality with a closed abdominal injury with liver damage is 30.4%, with stab wounds of the organ - from 4 to 10.5%, with combined injury, 39.3% of victims die.[1,5,14,15,21,22]

In modern combined trauma, victim sin whom these verity of damage according to the ISS scale corresponds to IV and V degrees (according to E. Moore, 1986) are characterized by a high mortality rate, reaching 40-80%. High mortality rates are associated with a combination of injuries, shock, blood loss, aggravated in the early postoperative period by the development of “abdominal compartment syndrome”, and subsequently, purulent-septic complications.[4,6,7,8,13,16,17]

The traditional surgical tactics for isolated and combined treatment injuries include laparotomy with correction of existing injuries of the abdomen and chest cavity. However, with massive injuries of internal organs, often combined with damage to large vessels, complete correction of all injuries takes a lot of time, which affects the outcome of treatment.[9,10,11,12,18,19,20]

Initially, the “damage control” strategy (M. Rotondo 1993) was used for the surgical treatment of wounded with poly trauma. This technique consisted of three stages.[23,24,25] The first is an emergency, immediate surgical intervention to stop active bleeding and prevent in section of the abdominal cavity. The second is the

implement at ion of a comprehensive intensive anti-shock therapy in the presence of a resuscitation chamber for the fastest rehabilitation of the body. The third - within 48-72 hours after the injury, the final decision on surgical treatment.

The aim of the study was to evaluate the effectiveness of the "damage control" method for severe liver damage.

MATERIALS AND METHODS. In the emergency surgery departments of the SFRNCEMP in 2009–2019, 130 patients with liver injury were operated on.

Of these, 19 (14.61%) patients with severe liver injuries of grade IV and V damage according to E. Moore. The effectiveness of multi-stage tactics was assessed by the level of mortality and the number of purulent-septic complications.

The results of surgical treatment of 19 patients with massive liver damage, aged 17 to 50 years, were studied. The average age is 26 years. Of these, 11 men, 8 women. The average score for the severity of injuries on the ISS scale was 34 points (17-76), according to E. Moore IV and V degrees of injury. The average blood loss was 2850 ml (1750-3850 ml). All patients underwent a multi-stage laparotomy with gauze (film) tamponade, the average number of operations per person was 2.7 (2-5), suturing of a liver wound with tamponade (13), extensive hepatotomy and vascular ligation (3), atypical resection (2), flashing large trunk vessels with taponade (1).The average bed/day in the intensive care unit is 13 (3-16), and the average bed/day in the clinic is 25 (3-28). Mortality was 26.3% (5 out of 19), mainly purulent-septic complications and multiple organ failure.

In addition, a correlation study was conducted: 41 patients with acute abdominal pathology treated with the "damage control" system (interrupted operation), 30 patients (control group similar in basic nosology, hospitalization, concomitant nosology, age) were performed using the " early total care"(simultaneous product of the full volume of surgical intervention, regardless of the type of nosology and the initial condition of the patient). To understand the severity of the patient and the legitimacy of managing patients in the "damage control" mode, a scale was designed (each indicator was evaluated from 1 to 4 points) of the patient's nosology:

<9 points – there are no indications for the application of the "damage control" technique,10-16 points – an unambiguous indication for "damage control".

Empiricism in decision making is permissible for adjacent values of the algorithm 8-9 points.

In the severity scale, these indicators were taken in to account: the duration of the disease, the source of peritonitis, the type of inflammatory and destructive processes in the abdominal cavity, with mesenteric-vascular thrombosis, the degree of intestinal necrosis was taken into account, with acute intestinal obstruction-the origin of the obstruction, in the circumstances of infected pancreatic necrosis-generalization and the location of the process, the presence of shock during polytrauma with damage to the organs of the abdominal cavity, etc. was taken into account.

Undoubtedly, an important and decisive moment of this tactic is the implementation of not only a single surgical intervention, but 2 or more according to indications.

RESULTS AND DISCUSSION

The mortality rate in the main group of patients with the damage control technique was 19.5% (8 out of 41 patients died). This ratio in the comparative group with the "early total care" technique was 53.3% (16 out of 30 patients died).

The study of the first steps of this tactic and the final data obtained were a determining factor for creating our own scale in order to take into account operational risk, as well as further prognosis of the disease based on the physiological condition of the patient. We took into account: the patient's age, blood pressure (mmHg), heart rate (beats/min), Hb (hemoglobin) g/l, Potassium (mmol\l), Sodium (mmol\l), urea (mmol\l), white blood cells, ECG, the state of the cardiovascular and respiratory systems, temperature and acidity. All indicators were evaluated in points (from 1 to 4, depending on the degree of their deviation):1-10 – compensated condition (favorable prognosis for life)11-29 – subcompensated state (border line state)30-44 – decompensated state (poor prognosis for life).

The proposed algorithm, which is based on numbering criteria, eliminates empiricism when choosing a treatment method with severe liver injuries in unstable patients with the risk of developing coagulopathy and multiple organ failure, makes it possible to determine the damage control indications with high accuracy, use this technique at the right time, recognize and prevent acceptable complications in advance, as well as predict the outcome of the disease. The strategy proposed above combines the strengths of programmed relaparotomy with the standard "damage control" technique for damage. Phased surgical treatment provides a chance to fully use the modernized resuscitation syndromic treatment, as well as prosthetics of organ functions in order to combat a systemic inflammatory reaction that is not amenable to drug and physiotherapeutic stimulation of intestinal paresis. Application of this strategy reduced mortality - from 53.3% to 19.5%.

CONCLUSION

1. The multi-stage surgical tactics of "damage control" for isolated and combined severe liver injuries is an effective method for unstable patients with the risk

of developing coagulopathy and multiple organ failure.
2. The use of the “damage control” technique helped to reduce the mortality rate from acute pathology of the abdominal organs from 53.3% to 19.5%.

BIBLIOGRAPHY

1. Azizov M.Zh. The state and ways of prevention of road traffic injuries in the Republic of Uzbekistan // Bulletin of emergency medicine, 2010; 2: 7.
2. Gavrishchuk Ya.V., Kazhanov I.V., Tulupov A.N. et al. Minimally invasive treatment of a victim with damage to the spleen // Bulletin of Surgery. I.I. Grekova, 2019; 4: 58-60.
3. Ibragimov F.I. Featuresoftreatmenttacticsforcombin edinjuriesoftheabdomenandpelvis // Surgery, 2018; 10: 34-38.
4. Ikramov A.I., Khadzhibaev A.M. Organization of emergency medical care for trauma patients in the Republic of Uzbekistan // Bulletin of emergency medicine, 2010; 2: 6.
5. Intensive therapy. Ed. Academician of the Russian Academy of Sciences B.R. Gelfand, prof. I.B. Zabolotsky. 2nd edition, revised and supplemented. Publ. Group “GEOTAR - Media”, 2019; 643-650.
6. Korita V.R., Sidorenko M.G. Damage to the duodenum 12 during an abdominal injury // Ambulance doctor, 2018; 3: 28-31.
7. Klevno V.A., Maksimov A.V. Clinical and morphological analysis of the erroneous diagnosis of trauma to the chest and abdomen // Vyatka Medical Bulletin, 2019; 3: 31-35.
8. Lebedev A.G., Yartsev P.A., Makedonskaya T.P. et al. Closed abdominal trauma with intestinal damage // Surgery, 2019; 5: 82-87.
9. Malkov I.S., Filippov V.A., Korobkov V.N. and other Diagnostic aspects of closed abdominal injuries // Kazan Medical Journal, 2016: 6: 892-897.
10. Malkov I.S., Filippov V.A., Korobkov V.N. and other Diagnostic aspects of closed abdominal injuries // Kazan Medical Journal, 2016; 6: 892-897.
11. Maslyakov V.V., Barsukov V.G., Uryadov S.E. et al. The role and place of damage control tactics for injuries of the abdomen // Herald of the Reaviz Medical Institute, 2019; 5: 128-136.
12. Mustafakulov I.B., Tilyakov A.B., Karabaev Kh.K., Mizamov F.O. Closed combined abdominal trauma. Met. recommendations. Samarkand, 2019.
13. Samokhvalov I.M., Belsky A.N., Gavrilin S.V. et al. Severe concomitant closed abdominal trauma: features of resuscitation tactics // Bulletin of Anesthesiology and Resuscitation, 2018; 4: 53-60.
14. Fayzulina R.R. Optimization of the diagnosis of blunt abdominal trauma / R.R. Fayzulina, O.B. Nuzova, E.O. Bobyleva // The Journal of scientific articles "Health and Education Millennium", 2017; 19(5): 9-11.
15. Khadzhibaev A.M., Valiev E. Yu., Usmanov H.Kh. Current provisions for the provision of surgical benefits to victims with combined injuries // Bulletin of emergency medicine, 2010; 2: 25.
16. Khadzhibaev A.M., Akhmedov Yu.M., Karabaev Kh.K. other. The choice of therapeutic and diagnostic tactics for closed combined abdominal injury // Sat. "Modern field surgery of injuries." St. Petersburg, 2011; 175.
17. Hsu C-P, Wang S-Y, Hsu Y-P, et al. Risk factors for liver abscess formation in patients with blunt hepatic injury after non-operative management. // Eur J Trauma Emerg Surg, 2014; 40(5): 547-552.
18. Jung K, Kim Y, Heo Y, et al. Management of severe blunt liver injuries by applying the damage control strategies with packing-oriented surgery: experience sat a single institution in Korea. // Hepatogastroenterology, 2015; 62(138): 410-416.
19. Kaltenborn A, Reichert B, Bourg CM, et al. Long-term outcome analysis of liver transplantation for severe hepatic trauma. // J Trauma Acute Care Surg, 2013; 75(5): 864-869.
20. Kennedy R, Brevard SB, Bosarge P, et al. Mesh wrapping for severe hepatic injury: a beneficial option in the trauma surgeon’s armamentarium. // Am J Surg, 2015; 209(3): 515-520.
21. Mehta N, Babu S, Venugopal K. An experience with blunt abdominal trauma: evaluation, management and outcome. // Clin Pract, 2014; 4(2): 599.
22. Mustafakulov I.B. et al. Aetiology and outcome of combined closed trauma of the abdomen according to the date of Samarkand hospital // Journal of Surgery, 2013; 1(5): 73-76.
23. Mustafakulov I.B. et al. Same Different Surgical Treatment of Bladder Injuries in Abdominal Polytrauma // Saudi Journal of Medical and Pharmaceutical Sciences, 2016; 2(3): 59-61.
24. Mustafakulov I.B. et al. Intra-abdominal Hypertension at Combined Injuries of the Abdominal Organs // American Journal of Medicine and Medical Sciences, 2019; 9(12): 499-502.
25. Zago TM, Tavares Pereira BM, Araujo Calderan TR, et al. Non operative management for patients with grade IV blunt hepatic trauma. // World J Emerg Surg, 2012; 7(suppl 1): 8.
26. Zago TM, Pereira BM, Nascimento B, et al. Hepatic trauma: a 21-year experience. // Rev Col Bras Cir., 2013; 40(4): 318-322.
27. Zaydfudim V, Dutton WD, Feurer ID, et al. Exsanguination protocol improves survival after major hepatic trauma. // Injury, 2010; 41(1): 30-34.