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## Eventration in the surgical clinical practice

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### Abstract

Results of surgical treatment of 25 patients with postsurgical eventration. 8 patients were delivered in urgent order, 17 – had planned hospitalization. Gender ratio of women / men was 44% and 54% respectively. The average age of patients was 62 years; 3 patients (40-50 years); 7 - (50-60 years); 7 - (60-70); 8 - (> 70years). In the analysis of laboratory parameters should be noted violation of protein homeostasis, such as low protein levels (<60 g / l) and reduced prothrombin index, which averaged 75%. The above factors and circumstances led to eventration in an average time of 9 days. Despite long-term experience in surgery, eventration is an inherent part of laparotomy. The presence of postoperative peritonitis often leads to eventration, in 7-8% of patients - to evisceration and high mortality rates.

**Keywords:** Eventration, abdominal wall, risk factors.

### 1. Introduction

Eventration is a prolapse of the anterior abdominal wall and a starting condition for depressurization of the abdominal cavity and the output of the internal organs beyond [1, 2, 3]. This postsurgical complication remains to be important subject of researches, as it is indirectly evidenced by the consistently high number of publications. During 1960-1990 years about 50 articles were published on this subject; although from 1991 till 2014 only 34 works were published. Despite long-term researches in clinical surgery, standardized protocols of surgical interventions and rapid improvement of the technical means, eventration still seems to be threatening attribute of an open intervention - its absolute frequency is constant over the past decades. At the same time, prevention and surgical correction remain imperfect. In such a case, the result is the development of a number severe complications of eventration and high mortality rate, which remained constant at 20-65% [2, 3, 8, 9]. According to some authors, patients with disorders of the abdomen cavity postoperative eventration developed from 0.03% to 9.5% of cases. The presence of postoperative peritonitis in 7-8% of patients leads to complete eventration – evisceration, which is an indication for surgical reoperation [7, 8]. Eventration remains the negative factor that eliminates the results of modern surgery. There are number of agents, under action of which eventration evolves: disbalance of homeostasis, degenerative changes in the anterior abdominal wall, peritonitis and other postoperative complications [3, 4, 5]. Therefore, there is a necessity of detailed studies and analysis of the circumstances of eventration genesis and work on its on time prevention and treatment. The objective of the research is to analyze the circumstances that lead to the development or threaten the development of eventration in the postsurgical period.

### 2. Material and methods

Medical case histories of the period 2004-2013 years in Surgery Clinic №1 Danylo Galytskyj Lviv National Medical University were retrospectively worked out. Selection, questionnarisation and detailed analysis of clinical cases of eventration was made. The character of the surgical intervention, the basic structure of nosological diagnoses, laboratory parameters and other parameters were questionnaired and analyzed. Worked on statistical results with statistical methods.

### 3. Results of the investigation and their discussion

Surgery Clinic №1 in Danylo Galytskyj Lviv National Medical University during 10 years treated 25 patients with postsurgical eventration. 8 patients were delivered in urgent order, 17 – had planned hospitalization. Value acute and routine pathology was 1: 2. On hospitalization patients general condition was: satisfactory - 6 persons; (24%), moderate severity - 14 persons; (56%), heavy - 5 persons; (20%). Gender ratio of women / men was 44% and 54%

respectively. The average age of patients was 62 years; 3 patients (40-50 years); 7 - (50-60 years); 7 - (60-70); 8 - (> 70years).

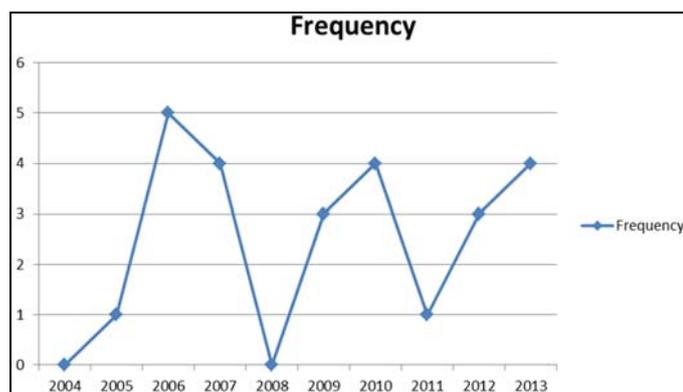
Tumors prevailed in nosological structure: colic (3 persons), tumors of hepatobiliary zone (4), gastric (1); also acute pancreatitis (3); hernia of the abdominal wall (3); perforated ulcers of the stomach (2) and other diseases were observed. It should be noted that patients had combination of surgical pathology with: in 44% of patients - cardiovascular system diseases (arterial hypertension, IHD), in 8% of patients had chronic obstructive diseases of respiratory system (bronchitis, chronic obstructive bronchitis) and liver diseases (cirrhosis). Including given results, at the stage of hospitalization it doesn't seem possible to find convincing predisposing circumstances that could influence the development of eventration in the future. Presence of acute surgical diseases and tumors should be considered as prognostically unfavorable circumstances. Eventration was often seen in elderly people, due to the presence of degenerative changes in the anterior abdominal wall [3, 6].

We were unable to identify connection between type of surgery and development of eventration. Instead, it was stated that postoperative complications conduct the development of eventration. Thus, when reexploration found that 5 patients had peritonitis caused by eventration, 80% (4 patients) died. This is confirmed by the world statistics- relatively high mortality was seen in patients with eventration, that developed after postoperative peritonitis [3, 4, 6].

In the analysis of laboratory parameters should be noted violation of protein homeostasis, such as low protein levels (<60 g / l) and reduced prothrombin index, which averaged 75%. At the background of reduced protein synthesis, time of the healing of laparotomy wound increases, phase of inflammation extends, collagen synthesis disrupts, wound strength at break decreases [2, 4]. 5 patients noticed infiltration of the wound edges, which eventually led to the development of eventration. Several studies indicate that a main evolution factor of eventration is increasing abdominal pressure [4, 5, 9]. This is confirmed by our observations: ascites in 5 cases (20%), cough - 5; (20%), flatulence in 5 (20 %).

The above factors and circumstances led to eventration in an average time of 9 days. Treatment by surgery took place on the day of its establishment. During surgery abdominal wall was stitched layer by layer (9 cases; 36%); through all the layers (16, 64%).

In chronological analysis of eventration frequency was stated that it is attributive, which means that annually during the period that was studied, approximately the same frequency was stated. The following pattern is clearly shown in Graph 1.



Graph 1: Eventration frequency during 2004-2013 years.

According to the different times of occurrence and genesis of changes, resulted in the eventration, we stratified them into 3 groups: local - changes that are fixed in the wound area, system - metabolism and combined - inflammatory and destructive changes in the area of wound against the background of abuse homeostasis. The general scheme of the stratification and structure of the circumstances that led to the development of eventration is shown in Figure 1.

Displayed scheme is essential from practical point of view, how it enables to predict the development of eventration. In our opinion, wound sanitation and correction of protein levels, give possibility to reduce the risk of eventration.

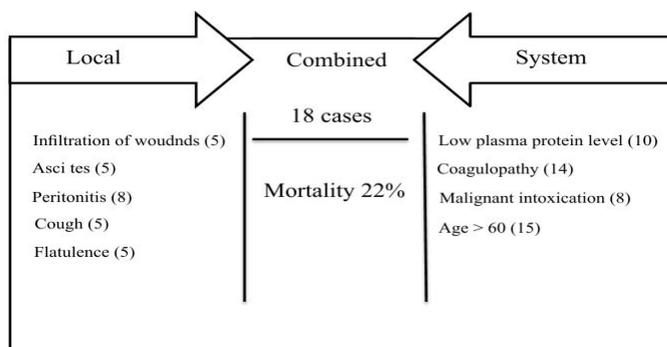


Fig 1: Stratification and structure of circumstances, that shaped development of eventration.

#### 4. Conclusions

1. Despite long-term experience in surgery, eventration is an inherent part of laparotomy.
2. The presence of postoperative peritonitis often leads to eventration, in 7-8% of patients - to evisceration and high mortality rates.
3. Stratification of changes, leading to eventration, allows surgeon to focus on major risk factors and form the main stages of prevention.

#### 5. References

1. Liang MK, Clapp M, Li LT, Berger RL, Hicks SC. Patient Satisfaction, conic pain, and functional status following laparoscopic ventral hernia repair. World J Surg 2013, 37(3)
2. Clapp ML, Hicks SC, Awad SS, Liang MK. Transcutaneous Closure of Central Defects (TCCD) in laparoscopic ventral hernia repairs (LVHR). World J Surg, 2013, 42-51.
3. Samama G, Brefort JL, Le Roux Y, Langlois G. Long-term results of the treatment of eventrations by intraperitoneal non-absorbable prosthesis (149 patients). Ann Chir 1999; 53(7):571-6.
4. Miller PR, Meredith JW, Johnson JC, Chang MC. Prospective evaluation of vacuum-assisted fascial closure after open abdomen. Ann. Surg 2004; 239(5):608-616.
5. Malbrain MLNG, Deeren D, De Potter TJR. Intra-abdominal hypertension in the critically ill: it is time to pay attention. Curr Opin Crit Care 2005, 156-171.
6. Ivatury RR, Cheatham ML, Malbrain M, Spugrue M. Intra-abdominal pressure measurement Techniques. Abdominal Compartment Syndrome. Bioscience 2006, 19-20.
7. Cheatham M.L., Safcsak K. Is the evolving management of intra-abdominal hypertension and abdominal compartment syndrome improving survival? Crit Care Med 2010, 38:402.

8. Gembal P, Grzegorzczak W, Grabowski B, Milik K, Rola R, Kołodziej-Ziarko A, Bielecki K. Eventrations the prospective analysis of risk factors of eventrations patients after laparotomy treated in 8 surgical departments of Podkarpacie District. *Wiad Lek* 2006; 59(11-12):767-71.
9. Sergio Carreira, Wanda Elizabeth Correa, Leonardo Carvalho Dias, Ivo Pitanguy Treatment of abdominal wall eventrations associated with abdominoplasty techniques. *Aesthetic Plastic Surgery* 1984; 8(3):173-179.