

ვის და მკურნალობის შედეგები. დასაბუთებულია ფილტვის არტერიის თრომბოემბოლიის ქირურგიული პროფილაქტიკის ჩვენებები ტრანსფასციური თრომბოზების დროს დიდი კანკეშა ვენის აუზში. პოსტოპერაციულ პერიოდში ყველა პაციენტს ტრანსფასციური თრომბოზით, ქირურგიული მკურნალობის რადიკალურობისაგან დამოუკიდებლად, მკურნალობა ენიშნება ისევე, როგორც ღრმა ვენების თრომბოზის დროს. აქტიური ქირურგიული ტაქტიკის ჩართვა ტრანსფასციური თრომბოზის დროს იძლევა ფილტვის არტერიის თრომბოემბოლიის ეფექტური პროფილაქტიკის საშუალებას.

ტრანსფასციური თრომბოზით გართულებული ვარიკოთრომბოფლებიტის დროს მკურნალობის ძირითად სტანდარტად უნდა ჩაითვალოს თრომბექტომია, დაავადების რეციდივის და ფილტვის არტერიის თრომბოემბოლიის შემდგომი პროფილაქტიკით. პერფორანტი ვენების თრომბოზის დროს რეკომენდებულია სუბფასციური თრომბექტომიის ჩატარება პერფორანტის შემდგომი გადაკვანძვით. ყველა პაციენტს ტრანსფასციური თრომბოზით, მიუხედავად ოპერაციული ჩარევის მოცულობისა, უნდა ჩატარდეს ისეთივე მკურნალობა, როგორც ღრმა ვენების თრომბოზის დროს.

MANAGEMENT OF ESOPHAGEAL PERFORATION: A CASE REPORT

¹Gurgenidze M., ¹Magalashvili D., ¹Akhmeteli L., ²Nemsadze G., ¹Lomidze N.

¹The First University Clinic of Tbilisi State Medical University, Department of General Surgery; Department of Surgery №1;
²Department of Radiology, Georgia

Esophageal perforation (EP) is a devastating condition. In modern times it is still associated with substantial morbidity and mortality. [3]. Injuries to the esophagus represent a rare but potentially lethal clinical condition. Emergency management is a challenge and mortality remains high [13]. Spontaneous perforation, referred to as Boerhaave's syndrome, accounts for only 15% of cases of esophageal perforation, foreign bodies for 14%, and trauma for 10% [11]. The common denominator of all these heterogeneous conditions is the contamination of surrounding spaces with digestive contents and the evolution to severe sepsis and death in the absence of timely diagnosis and appropriate treatment. Mortality of esophageal perforation ranges between 10% and 20% and the delay in treatment is the most important survival predictor [8, 10].

Case Report. 62-year-old male patient came to Surgical Department of the First University Clinic of Tbilisi State Medical University on 17.10.2018 15:00. The patient complained of pain in the chest cavity, especially after eating, shortness of breath, fever, chills, weakness. The patient felt pain in the chest cavity

after eating 4 days before hospitalization. Despite this, the next day, he took alcohol in large quantities. Last night he felt a sharp pain in the chest cavity. In the ER department, the patient underwent a clinical examination. Laboratory tests were carried out. Computed tomography of the thoracic cavity enhanced by per os contrast was performed. CT scan revealed pneumomediastinum, extravasation of contrast medium at the level of the 8th thoracic vertebra. The size of the defect was 2.1 cm. Contrast agent spread partly paraesophageally, partly in the preaortic space. It did not spread into the abdominal cavity. Found infiltration in the basal segments of the lungs on both sides. A small amount of fluid was detected in both pleural cavities (Fig. 1,2). Esophagogastroduodenoscopy revealed a defect in the esophagus at the level of 32 cm from the incisors. Dimensions of defect were 2.0 - 3.0 cm. Patient was hemodynamically stable, $spO_2 - 91\%$, $t - 38,4^\circ C$, cor - rhythmic tones, muffled, pulmo - auscultatory marked weakened breathing on both sides in the lower lobes and crepitus. Diagnosis - perforation of the lower third of the thoracic part of esophagus, acute mediastinitis.

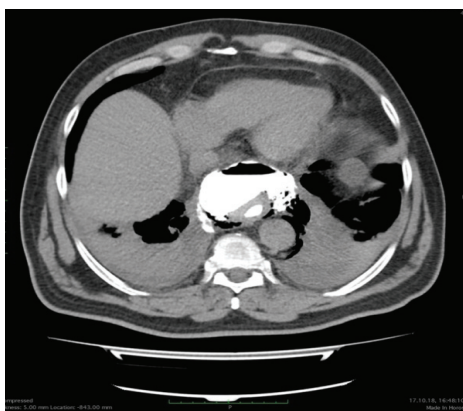


Fig. 1. Axial section. Mediastinal window. Contrast agent introduced per os was noted in the esophagus and spread outside its lumen – extravasation. Paraesophageal emphysema

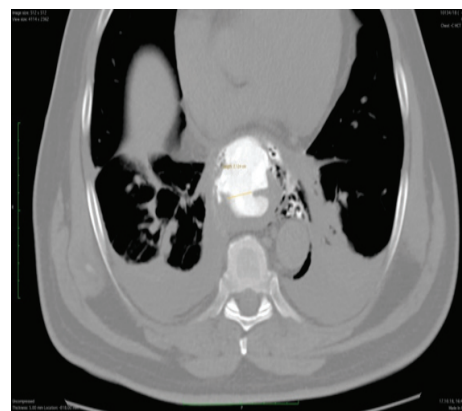


Fig. 2. Axial section. Bone window. Contrast agent introduced per os was noted in the esophagus and spread outside its lumen – extravasation. A defect with a diameter of 2.1 cm was noted on the anterior wall of the esophagus. Accumulation of large amounts of contrast agent was noted ventrally of the esophagus. Paraesophageal emphysema

An urgent operation was performed on 17.10.2018 21: 40 - 18.10.2018 00:35. Left-sided posterolateral thoracotomy, mediastinotomy, suturing of the defect, buttressing of the sutures with the mediastinal pleura, washing and drainage of the mediastinum and left pleural cavity were performed. Intraoperatively 400 ml of turbid fluid was found in the left pleural cavity. Fluid was aspirated from the pleural cavity. The mediastinal pleura in the lower third was inflamed, edematous. On palpation, fluctuation was felt. Wide mediastinotomy was performed. Food debris and also a dark, cloudy liquid, both in large quantities were noted in the mediastinum. Food debris and liquid were completely evacuated from the mediastinum. A large defect (up to 3 cm in diameter) was found in the lower third of the esophagus. The edges of the defect were sharply inflamed, edematous, loosened. Esophagus was mobilized. A defect was sutured with technical difficulties and was buttressed with a mediastinal pleura flap. The mediastinum was washed with saline solution. Nasogastric tube was inserted. Drainage with active aspiration was placed in the mediastinum. The mediastinal pleura was closed with rare sutures. The pleural cavity was also washed with saline. Drainage with active aspiration was placed in the left pleural cavity. The thoracotomy wound was sutured in layers. After that, a Witzel gastrostomy was performed.

After the operation, the patient's treatment continued in the intensive care unit. Antibiotic therapy with cefepime, vancomycin, metronidazole was carried out. Bacteriological examination of fluid taken from the mediastinum during surgery revealed the growth of *Candida albicans*. Hence, fluconazole was included in the treatment. In addition, infusion therapy, gastroprotection, anticoagulation, symptomatic therapy was carried out. On 22.10.2018 antibiotic therapy was adjusted and meropenem was included instead of cefepime. In the Postoperative period, a small amount of hemorrhagic discharge was observed from the pleural drainage. Small purulent discharge from the mediastinal drainage was also noted.

Throughout the hospitalization, the patient was adequately nourished first with a gastrostomy tube and then per os.

Extubation was performed on 25.10.2018. CPAP therapy was conducted periodically. Bacteriological examination of blood, pleural and mediastinal effusions, X-ray and CT examinations of the chest cavity were carried out periodically according to indications.

Hectic fever appeared (39°C) on 03.11.2018. CT of chest cavity was performed. The study revealed free air paraesophageally in the region of the lower third of the esophagus. Extravasation of per os contrast agent was noted. Contrast agent spread in both pleural cavities. Infiltrative changes were noted in both basal segments of the lungs. Pleural separation on the right side was 7.6 cm and on the left - 3.7 cm. Pleural drainage was also placed on the right side. 200

ml of reddish brown exudate was obtained. This time, bacteriological examination of pleural exudate revealed *Klebsiella pneumoniae*. Antibiotic therapy was corrected. Colimycin was prescribed instead of meropenem and vancomycin.

Since leakage was noted, it was decided to place an esophageal stent in the area of the defect. Stenting with a self-expanding covered metal stent was performed on 05.11.2018. After that the patient was fed with liquid meal per os. Temperature returned to normal. The patient's condition gradually improved. On radiographs, infiltrative changes in the lung tissue were no longer observed. Laboratory tests improved and on November 17.2018 the patient was transferred from the intensive care unit to the surgical department.

The right-sided pleural drain was removed on 19.11.2018. On 20.11.2018, the control X-ray examination revealed stent displacement. It was corrected endoscopically. Since there was no more discharge from the mediastinal and left-sided pleural drains, after control X-ray examination, they were removed on 26.11.2018. CT with per os contrast was performed. Extravasation of contrast was no longer noted (Fig. 3).

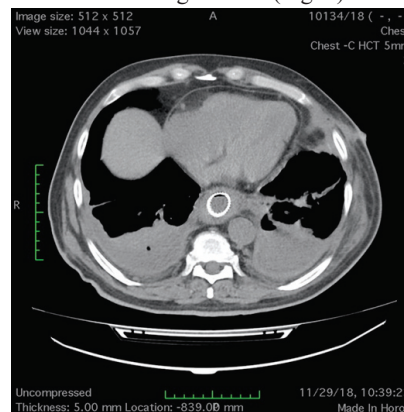


Fig. 3 Axial section. Mediastinal window. A stent was marked in the lumen of the esophagus. Adjacent soft tissues were infiltrated. Fluid and gas masses were noted in both pleural cavities

A complication in the form of bleeding was noted on 01.12.2018. Bleeding was controlled conservatively. Esophagogastroduodenoscopy was performed but active bleeding was not found. Stent position was adequate. Anemia was corrected by RBC transfusion. Recurrence of bleeding was not observed. On the control X-ray examination, the position of the stent was correct.

Finally, stent was removed and on 07.12.2018 the patient was discharged from the clinic in good condition. Control CT with per os contrast was performed (Fig. 4).

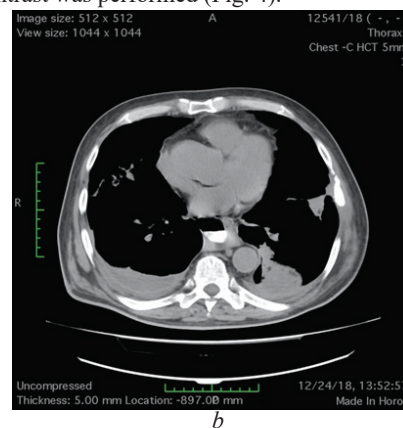
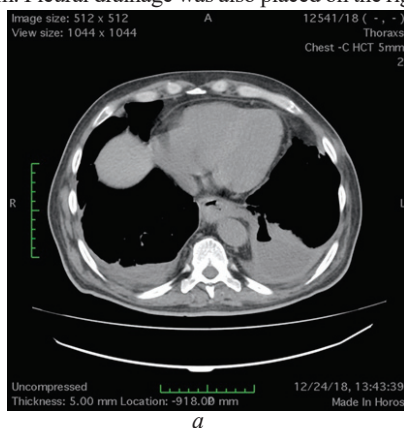


Fig. 4 Axial section. Mediastinal window. a - Paraesophageal infiltrative changes were reduced. Fluid and gas masses of pleural cavities were reduced too; b - Contrast agent introduced per os was noted in the esophagus and did not spread outside its lumen, no extravasation

Table. Criteria for non-operative management of esophageal perforations

| Delay in management | Early: less than 24 h |
|----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Clinical presentation | Absence of symptoms and signs of sepsis |
| Radiological criteria | Cervical or thoracic location of the esophageal perforation Contained perforation by surrounding tissues - Intramural - Minimal peri-esophageal extravasation of contrast material with intra-esophageal drainage - Absence of massive pleural contamination |
| Esophageal characteristics | No preexistent esophageal disease |
| Other | Possibility of close surveillance by expert esophageal team Availability of round the clock surgical and radiological skills |

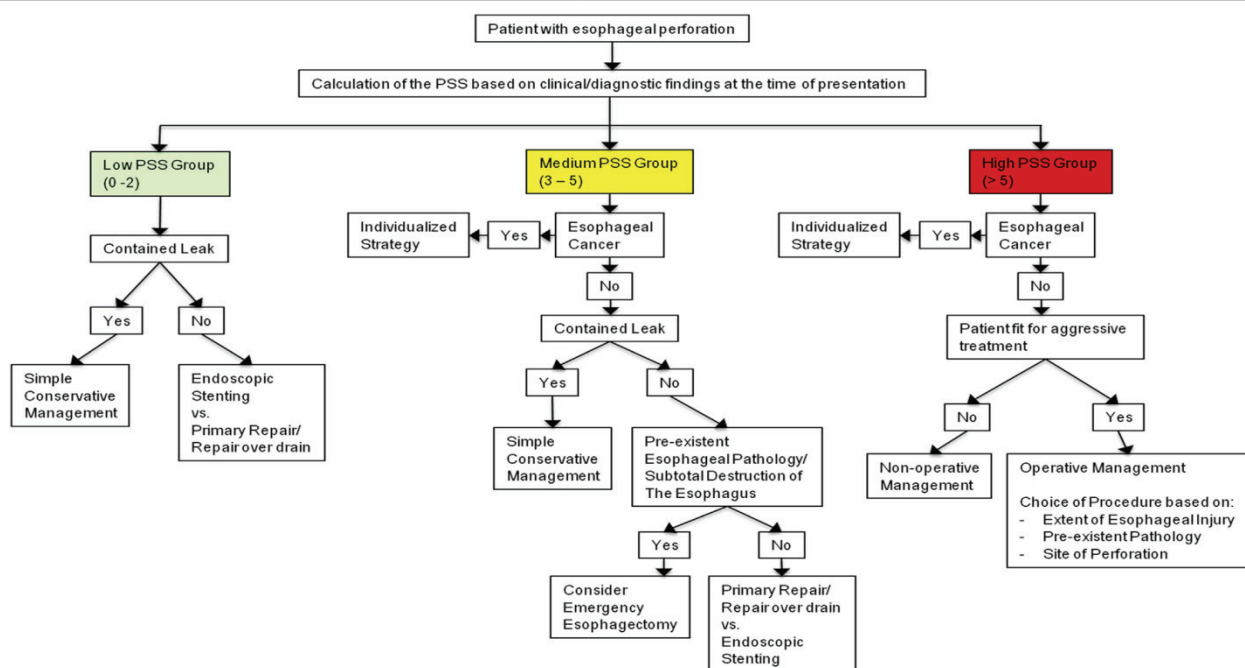


Fig. 5. Pittsburgh suggested a perforation severity scoring system

Within two years from the moment of injury of the esophagus, the patient feels well, takes food without problems, refuses to conduct control studies.

Esophageal perforation is an emergency situation that requires quick decision making to save the patient. 1-4 A multitude of operative strategies have been suggested to deal with esophageal disruption [27].

In our case, we cannot assert with absolute accuracy, but can only guess that the perforation was the result of a foreign body (for example, a bone accidentally swallowed while eating). It took 4 days from the moment of the onset of pain to hospitalization. The patient himself associates a plentiful meal and the onset of pain. There was no vomiting. So, we consider this case as perforation by a foreign body.

Contrast-enhanced computed tomography (CT) and CT esophagography is the imaging examination of choice in patients with suspicion of EP. CT is highly sensitive (92–100%) in detecting EP and helps to assess extension to adjacent structures (collection of air or fluid in the mediastinum, pleural and intraperitoneal effusions) and to guide initial therapy. CT can also

eliminate other conditions that may mimic EP (aortic dissection, esophageal intramural hematoma, etc.) [4,20,28,39]. In select cases, contrast-enhanced esophagogram (gastrografin/barium) may provide useful information regarding the location and the contained character of EP [20]. Indirect signs of esophageal injury can also be seen on a plain chest radiograph (pleural effusion, pneumomediastinum, subcutaneous emphysema, hydrothorax, pneumothorax, and collapse of the lung) [30].

Non-operative management (NOM) of EP can be considered in stable patients with early presentation, contained esophageal disruption, and minimal contamination of surrounding spaces if highly specialized surveillance is available. The criteria developed by Altorjay et al. [2] more than two decades ago are still the mainstay of non-operative management (Table). Endoscopic treatment is the gold standard for closing EP that occur and are recognized during an endoscopic procedure. New interventional endoscopic techniques, including endoscopic clips, covered metal stents, and endoluminal vacuum therapy, have been developed over the last several years to manage esophageal perforation in an attempt to decrease the related morbidity and

mortality [36]. Endoscopic clip placement (through the scope clips, over the scope clips) is currently the standard method for closing small (< 2 cm) luminal perforations [5, 23]. Endoscopic stents (partially or fully covered self-expandable metal stents, self-expandable plastic stents) can be used to cover larger defects or complete unsatisfactory clip closure [32]. In a recent review, the use of self-expandable stents for the treatment of esophageal leaks (spontaneous, iatrogenic, and postoperative) resulted in 88% success and 7.5% mortality rates. These results compared favorably with outcomes of surgery (83% success and 17% in hospital mortality) leading the authors to conclude that esophageal stenting can be successfully applied as an alternative therapeutic strategy in EP [25]. Minimal 2–4-week duration of stent placement has been advocated to allow sealing of the perforation. Esophageal stent placement is probably just as effective as surgical repair for the treatment of iatrogenic EP [17]. Endoscopy may be used as definitive treatment either alone or in combination with interventional radiology or surgical procedures (drainage of pleural abscess, or compressive pneumothorax, etc.) [6]. Successful closure of esophageal defects by primary or rescue endoluminal vacuum therapy has been recently reported and may represent a promising alternative treatment for EP [21,31]. In patients with late presentation and in patients with non-endoscopic EP, the use of endoscopy as first-line therapy may be considered. Although successful endoscopic management has been reported in select Boerhaave [19,33,38,39] patients with minimal symptoms and signs of sepsis, concerns on patient safety warrant caution regarding first-line use of endoscopic treatment under such circumstances [6,33]. Endoscopic stenting is a useful adjunct treatment tool in patients with persistent leakage following surgical treatment of EP [9, 14].

More recently, the Pittsburgh classification has been developed to include an esophageal perforation score based on ten clinical and radiological factors to help decision-making for patients with EP [1]. The score has been validated in a multinational study, and it has been suggested that low score (≤ 2) patients might be eligible for non-operative management [27].

In recent years interventional endoscopy and radiology have further broadened the spectrum of available treatment options. Modern nonoperative management ranges from conservative treatment to advanced interventional procedures. Against this background the group from Pittsburgh suggested a perforation severity scoring system (PSS) [1]. PSS can be used to stratify patients with esophageal perforation into distinct subgroups with differential morbidity and mortality outcomes. Furthermore, PSS strata could be used to identify candidates for nonoperative management [27, 29, 35].

Morbidity, frequency of operative treatment, length of stay, and mortality were strongly associated with the score value. Stratification was performed by creating low- (PSS 2), intermediate- (PSS 3-5), and high-risk- (PSS>5) groups. The low-risk group had significantly better outcomes regarding morbidity, mortality, and length of stay compared with the other groups. Moreover, frequency as well as dimension of operative treatment was significantly lower. These observations lead to conclude that affiliation to group 1 (low PSS) is associated with more favorable outcome and might be an indicator for possible nonoperative treatment. The fact that each of the most threatening variables, esophageal cancer and circulatory shock, is associated with 3 points and therefore by definition excluded from group 1, adds further support to this conclusion [26, 27] (Fig. 5).

Esophageal stent placement for the treatment of an acute perforation or an intrathoracic anastomotic leak after esophagec-

tomy has become a recognized treatment option for selected patients. These patients include patients with an intrathoracic leak without esophageal necrosis or a mucosal injury greater than 6 cm in length. Stent placement for an acute perforation offers the potential advantages of earlier oral nutrition, a reduced hospital stay, and avoidance of the morbidity and recuperation associated with an operative repair while achieving success rates that compare favorably with traditional primary closure [15]. Esophageal stent placement for an anastomotic leak offers the same advantages and appears to significantly reduce the rate of anastomotic stricture requiring treatment compared with reoperative repair or expectant management [16]. However, untoward events have been reported after esophageal stent placement for the treatment of an anastomotic leak or acute esophageal perforation. These include fistulization with vascular structures, migration with distal bowel obstruction, airway fistulization or compression, esophageal necrosis, and stent fracture or degradation [14,18,37].

The risk of significant complications related to the use of an esophageal stent to treat an intrathoracic anastomotic leak or acute perforation was significantly reduced when the stent could be removed in less than 14 or 28 days, respectively. Clinicians using this technique are encouraged to adopt systematic criteria for removing esophageal stents such as those outlined, which include stent dwell time. This may allow a significant reduction in the rare but serious complications reported in patients with an acute esophageal perforation or intrathoracic anastomotic leak treated with an esophageal stent [14].

Surgery should be undertaken in all patients who do not meet NOM criteria. If surgery is indicated for EP, patients should be taken to the operative room as soon as possible. Even minor delays in surgical treatment may increase morbidity and mortality rates. Mortality of patients managed within 24 h of EP is under 10% compared to 30% after this time [1,7,8,12,20]. General principles of esophageal perforation management include (1) excellent exposure, (2) debridement of non-viable tissue, (3) closure of defect, (4) use of buttress to reinforce esophageal sutures, and (5) adequate tube drainage. Primary repair is the treatment of choice for EP with free perforation of the thoracic esophagus. Management of perforation of the thoracic esophagus relies on immediate interruption of mediastinal and pleural contamination, debridement of the perforation to healthy tissue, tension-free primary repair, and adequate external drainage [34]. Ases demand an individualized approach and it is difficult to be proscriptive about the actual operative steps. Thoracotomy will usually be required and the degree of pleural effusion or visible wall defect on CT may guide the incision side. A laparotomy or laparoscopy will usually be required in addition to enable construction of a feeding jejunostomy and possibly a decompressive tube gastrostomy. The alternative is a nasogastric tube or combination of tubes to allow decompression and feeding. In general, a diversionary cervical esophagostomy (for saliva) is not recommended. Buttressing the esophageal repair with surrounding viable tissue (intercostal muscle flap, pleural or pericardic patch) has been recommended to decrease the risk of leakage. Drainage of the mediastinum and pleural cavity is required and enteral nutrition remains an essential component of the treatment plan [13].

If direct repair of thoracic EP is not feasible (hemodynamic instability, delayed surgical exploration, extensive esophageal damage) esophageal exclusion, diversion, or resection should be performed. Repair over a large size T-tube can be used to create a controlled esophago-cutaneous fistula and minimize

mediastinal and pleural contamination [22]. Complete esophageal diversion or thoracic esophageal resection is required in the presence of large esophageal disruption; creation of a cervical esophagostomy and feeding jejunostomy are mandatory in these patients [34]. Resection is the best option in the presence of pre-existing esophageal pathology [12,24]. If the patient survives, colon interposition or gastric pull-up reconstruction are required 6–12 months after complete diversion or resection of the thoracic esophagus [13].

In our case, hospitalization was late, there was an effusion as in the mediastinum as in both pleura, mediastinitis was developed. An emergency operation was performed. After mobilization of the esophagus, the defect was sutured and reinforced with a pleural flap. After washing of the mediastinal and pleural cavities, they were drained. Despite this, leakage developed. Therefore, a stent was placed in the defect area endoscopically. Complications in the form of stent dislocation and subsequently developed gastroduodenal bleeding occurred. The first complication was corrected endoscopically and the subsequent one was eliminated by conservative measures.

Thus, esophageal perforation continues to present a diagnostic and therapeutic challenge despite decades of clinical experience and innovation in surgical technique. Accurate diagnosis and early treatment are essential to the successful management of patients with this increasingly frequent condition. The diagnostic errors and delayed treatment that result significantly increase morbidity and mortality. A high degree of suspicion in clinical situations that might be associated with or secondarily lead to esophageal perforation; starting appropriate treatment within 24 h can be lifesaving under these circumstances. Both CT and endoscopy are reliable diagnostic tools and their use should be tailored to the patient condition. Definitive management of esophageal emergencies should be undertaken in specialized centers in which multispecialty expertise is available round the clock. Despite all this, optimal therapy, especially after delayed diagnosis, continues to evolve. Since the original description of esophageal perforation more than 250 years ago, diagnosis remains challenging, management remains controversial, and mortality remains high.

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SUMMARY

MANAGEMENT OF ESOPHAGEAL PERFORATION: A CASE REPORT

¹Gurgenidze M., ¹Magalashvili D., ¹Akhmeteli L.,
²Nemsadze G., ¹Lomidze N.

¹The First University Clinic of Tbilisi State Medical University, Department of General Surgery; Department of Surgery №1;
²Department of Radiology, Georgia

Esophageal perforation (EP) is a devastating condition. In modern times it is still associated with substantial morbidity and mortality. 62-year-old male patient came to Surgical Department of the First University Clinic of Tbilisi State Medical University on 17.10.2018 15:00. The patient complained of pain in the chest cavity, especially after eating, shortness of breath, fever, chills, weakness. The patient felt pain in the chest cavity

after eating 4 days before hospitalization. CT scan revealed pneumomediastinum, extravasation of contrast medium at the level of the 8th thoracic vertebra. Esophagogastroduodenoscopy revealed a defect in the esophagus at the level of 32 cm from the incisors. Dimensions of defect were 2.0 - 3.0 cm. An urgent operation was performed. Left-sided posterolateral thoracotomy, mediastinotomy, suturing of the defect, buttressing of the sutures with the mediastinal pleura, washing and drainage of the mediastinum and left pleural cavity were performed. A Witzel gastrostomy was performed. After the operation, the patient's treatment continued in the intensive care unit. Since leakage was noted, it was decided to place an esophageal stent in the area of the defect. Stenting was performed on 05.11.2018. A complication in the form of bleeding was noted on 01.12.2018. Bleeding was controlled conservatively. Finally, stent was removed and the patient was discharged from the clinic in good condition on 07.12.2018. New interventional endoscopic techniques, including endoscopic clips, covered metal stents, and endoluminal vacuum therapy, have been developed over the last several years to manage esophageal perforation. Surgery should be undertaken in all patients who do not meet non-operative management criteria. Buttressing the esophageal repair with surrounding viable tissue has been recommended to decrease the risk of leakage. If direct repair of thoracic EP is not feasible esophageal exclusion, diversion, or resection should be performed. Repair over a large size T-tube can be used to create a controlled esophago-cutaneous fistula and minimize mediastinal and pleural contamination. Thus, esophageal perforation continues to present a diagnostic and therapeutic challenge despite decades of clinical experience and innovation in surgical technique.

Keywords: esophagus, perforation, injury, CT scan, esophagogastroduodenoscopy, stent, nonoperative management, operative management.

РЕЗЮМЕ

ЛЕЧЕНИЕ ПЕРФОРАЦИИ ПИЩЕВОДА: ОПИСАНИЕ КЛИНИЧЕСКОГО СЛУЧАЯ

¹Гургенидзе М.Р., ¹Магалашвили Д.З., ¹Ахметели Л.Т.,
²Немсадзе Г.Ш., ¹Ломидзе Н.Б.

¹Первая университетская клиника Тбилисского государственного медицинского университета, департамент хирургии, департамент хирургии №1; ²департамент радиологии, Грузия

Перфорация пищевода (ПП) - серьезная проблема, которая по сей день ассоциируется со значительной заболеваемостью и смертностью. 17.10.2018 г. в хирургический департамент Первой университетской клиники Тбилисского государственного университета поступил пациент, мужчина 62 лет с жалобами на боли в грудной полости, особенно, после приема пищи, одышку, лихорадку, озноб, общую слабость. Боли в грудной полости начались за 4 дня до госпитализации, после приема пищи. КТ выявила пневмоперитонеум, экстрavasацию контрастного вещества на уровне VIII грудного позвонка. При эзофагогастродуоденоскопии на уровне 32 см от резцов выявлен дефект пищевода размером 2,0-3,0 см. Проведена urgentная операция - левосторонняя торакотомия, медиастинотомия, ушивание дефекта, укрепление швов медиастинальной плевры, санация и дренирование средостения и плевральной полости. Выполнена

гастростомия по Витцелю. После операции лечение больного продолжалось в реанимационном отделении. Поскольку выявилась недостаточность швов, было решено провести стентирование участка дефекта. Манипуляция проведена 05.11.2018 г. 01.12.2018 г. выявлено осложнение в виде кровотечения, которое было купировано консервативными методами. Стент был удален и 07.12.2018 г. пациент выписан из клиники в хорошем состоянии. За последние несколько лет для лечения перфорации пищевода разработаны новые интервенционные эндоскопические методы, включая эндоскопическое клипирование, стентирование покрытыми металлическими стентами, внутрисветную вакуумную терапию. Хирургическому вмешательству подлежат все пациенты, состояние которых не соответствует критериям неоперативного лечения. Для снижения риска недостаточности швов, рекомендуется укрепление швов пищевода окружающими жизнеспособными тканями. При невозможности наложения первичных швов на дефект грудного отдела пищевода, следует выполнить выключение, отведение или резекцию пищевода. Т-образный дренаж большого размера может быть использован для создания контролируемого пищеводно-кожного свища и минимизации инфицирования средостения и плевры. Таким образом, несмотря на клинический опыт, накопленный десятилетиями, и инновации в хирургической технике, перфорация пищевода продолжает оставаться вызовом как с диагностической, так и лечебной точки зрения.

რეზიუმე

საყლაპავის პერფორაციის მართვა: კლინიკური შემთხვევის აღწერა

¹მ. გურგენიძე, ²დ. მაღალაშვილი, ¹ლ. ახმეტელი, ²გ. ნემსაძე, ¹ნ. ლომიძე

¹თბილისის სახელმწიფო სამედიცინო უნივერსიტეტი, პირველი საუნივერსიტეტო კლინიკა, ქირურგიული დეპარტამენტი, ქირურგიის №1 დეპარტამენტი; ²რადიოლოგიის დეპარტამენტი, საქართველო

საყლაპავის პერფორაცია უმძიმესი დაავადებაა, რომელიც სადღეისოდ ასოცირდება მნიშვნელოვან ავადობასა და ლეტალობათან. 17.10.2018 წ. 15:00 სთ-ზე თსსუ პირველი საუნივერსიტეტო კლინიკის ქირურ-

გიულ დეპარტამენტში მოთავსებული იყო პაციენტი - 62 წლის მამაკაცი გულმკერდში ტკივილით, რომელიც ძლიერდებოდა საკვების მიღების შემდეგ, სუნთქვის გაძნელებით, ცხელებით, შემცივნებით, სისუსტით. პაციენტმა ტკივილი პირველად იგრძნო პოსპიტალიზაციამდე 4 დღით ადრე, ჭამის შემდეგ. კტ კვლევით გამოვლინდა პნევმოქსინოზი, კონტრასტის ექსტრაგაზაცია გულმკერდის მე-8 მალის დონეზე. ეზოფაგოგასტროდუოდენოსკოპიით აღმოჩნდა საჭრელი კბილებიდან 32 სმ მანძილზე მდებარე საყლაპავის დეფექტი ზომებით 2,0-3,0 სმ. ჩატარდა სასწრაფო ოპერაცია. შესრულდა მარცხენამხრივი წინა-გვერდითი თორაკოტომია, მედიასტინოტომია, დეფექტის გაკერვა, მედიასტინური პლევრით ნაკერების გამყარება, შუასაყრის და მარცხენა პლევრის დრუხ სანაცია, დრენირება. გასტროსტომა ფორმირდა ვიტცელის წესით. ოპერაციის შემდეგ პაციენტის მკურნალობა გაგრძელდა რეანიმაციულ განყოფილებაში. აღინიშნა ნაკერების უკმარისობა, რის გამოც გადაწყდა დეფექტის არის სტენტირება. მანიპულაცია შესრულდა 05.11.2018 წ. 01.12.2018 წ. აღინიშნა გართულება – სისხლდენა, რომელიც შეჩერებული იყო კონსერვატიული მეთოდებით. 07.12.2018 წ. სტენტი ამოღებული იყო და პაციენტი კარგი მდგომარეობით გაეწერა კლინიკიდან. ბოლო წლებში შემუშავებულია საყლაპავის პერფორაციის მკურნალობის ახალი ინტეგრაციული ენდოსკოპიური მიდგომები, როგორცაა ენდოსკოპიური კლიპირება, სტენტირება დაფარული მეტალის სტენტის გამოყენებით, ენდოლუმინური ვაკუუმ-თერაპია. პაციენტები, რომელთა მიმდინარე მდგომარეობა ვერ თავსდება არაოპერაციული მკურნალობის კრიტერიუმებში, ექვემდებარებიან ოპერაციულ მკურნალობას. ნაკერების უკმარისობის თავიდან ასაცილებლად რეკომენდებულია ნაკერების გამყარება ირგვლივმდებარე სიცოცხლისუნარიანი ქსოვილებით. იმ შემთხვევაში, როდესაც დეფექტის პირველადი გაკერვა ვერ ხერხდება, შესაძლებელია შესრულდეს საყლაპავის გამოთიშვა ან რეზექცია. შუასაყრისა და პლევრის დრუხების ინფიცირების მინიმიზაციისათვის ასევე შესაძლებელია ფართე T-tube-ის გამოყენება კონტროლირებული საყლაპავ-კანის ფისტულის შესაქმნელად. ამრიგად, მიუხედავად ათწლეულებით დაგროვილი კლინიკური გამოცდილებისა და ინოვაციური ქირურგიული მიდგომებისა, საყლაპავის პერფორაცია მაინც რჩება დიაგნოსტიკურ და თერაპიულ გამოწვევად.