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AN ESOPHAGEAL ANASTOMOSIS LEAKAGE IN CASE OF ESOPHAGEAL ATRESIA

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10 –21 % of open operations and 7.6 % of thoracoscopic operations of direct esophageal anastomosis complicates with anastomosis leakage according to literature's information [7, 9]. The reason of such a complication is primarily a large diastasis between the esophageal ends, so anastomosis formed with a considerable tension of tissues, in case of hypoplasia or excess mobility of distal esophageal segment [1, 2, 4–6]. Pleural cavity drainage, an extra sutures in anastomosis location or sutured esophageal ends dissection with neck stoma and abdominal stoma formation, i.e. operation of double esophagostomy [3, 8]. Purpose of the investigation is to improve a surgical treatment outcomes in cases of the direct esophageal anastomosis leakage in newborns with esophageal atresia.

Material and Methods. 92 newborns with esophageal atresia undergone the direct esophageal anastomoses from 1982 till 2012 were analyzed. There were 67 males and 25 females. Gestational age varied 29–40 weeks, age median was 35±1 weeks. Children's body weight varied 1750 to 3220 gr. All the children have been operated in 2–4 days after birth, it depended upon the size of tracheoesophageal fistulas (TEF) and pulmonary complications dynamic. A direct esophageal anastomoses were formed, only a proximal esophageal parts were large-mobilized in all the children. A single-row continuous invaginative were used with non-absorbable Prolen 5/0 – 6/0. An esophageal elongation of proximal esophageal part according to Livaditis-Kimura using our modification of esophagomyotomy, were applied in 9 children [9].

Results and Discussion. 9 patients died after operation. So postoperative lethality was about 10 %. 3 patients developed recurrence of tracheoesophageal fistula, 4 patients developed anastomotic leakage. The last complication was the subject of our

investigation, so it had been deeply analyzed.

In the first case anastomosis was made in terms of distal esophageal segment hypoplasia with a very thin muscle layer. Sutures were made with a moderate tension, but they cut posterior wall and the leakage appeared. The second patient paratracheal part of distal esophageal segment looked like a narrow tube 14 mm length and 2 mm in diameter. Its mobilization and the direct esophageal anastomosis formation in the lateral wall of this «tube» led to the necrosis of a distal esophageal part and anastomotic leakage in the one day after the operation. In 2 remaining patients, two prematures with body weight rather more, then 1800 gr, there were lethal cases during the first day after the operation. There was no autopsy.

In the first two patients pleural drainage was performed because of the pneumothoraxes, revealed after an X-ray examination. Some quantity of air, a little mucus and saliva moved out by the drainage. Mucus was very viscous, so it was impossible to aspirate it through the tube 4.0 mm in diameter with active aspiration. It hardly could be moved by the swab from the thoracic organs, so it was very difficult to achieve the complete sanitation of the pleural cavity.

It's easy to suppose mucus and saliva entrance to the pleural cavity during the constant swallowing movements in the postoperative period. If an extrapleural approach to the mediastinum posterior used primarily, we can suppose the mucus conglomerated in mediastinum posterior, then it damaged parietal pleura and came upon the pleural cavity. This assumption confirmed by an intraoperative findings in one of the operated children, when mucus ruptured the mediastinal pleura behind the lung's radix and filled a lower half of the pleural cavity. Rethoracotomy was performed in 3 days in this patient, so there were 40.0 ml of mucus in the pleural cavity and surgeons spent a lot of time to remove it.

Removing of mucus and saliva from the pleural cavity allowed to spread the lung completely, the lung one filled the pleural cavity immediately, keeping a satisfactory pulmonary aeration in postoperative period. Drainage tube usually was removed in a one day. Peristaltic function of gastro-intestinal tract was restored in 3 days after operation, so children were fed by the milk through the abdominal esophagostoma.

Having such an intraoperative observations in two patients, we doubt recommendations of some foreign authors [3, 8] about efficiency of pleural drainage after esophageal anastomotic leakage appearance. We consider pleural drainage to be efficiency in two cases: by lavage

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the pleural cavity with antiseptics with enzymes to destroy mucus, or using the constant saliva aspiration from the mouth till the complete anastomosis healing, or by using the first and the second methods at the same time. However such a conditions were not mentioned by the authors of appropriate articles.

In both cases operations finished with disconnection of esophageal parts, their ligation and sanation of pleural cavity. The using a patient position on the back, oral esophageal part moved to the neck, neck esophagostoma was formed, and distal part moved to the anterior abdominal wall as abdominal esophagostoma. In spite of all hardships, children successfully undergone all the operations and were graduated satisfactory to have a further treatment.

Earlier anastomotic leakage led to the purulent mediastinitis, and children usually died in 2 days after diagnosis of such a complication, but now critical care medicine develops rapidly, so such a patients don't die in the hospital after anastomotic leakage appearance, but they

have a satisfactory functions of vital important systems of the organism for few days. It allows the surgeons to perform a rethoracotomy, to divide esophageal parts and to form esophagostomas. Due to the modern foundations of intensive therapy, developed in critical care medicine department, children satisfactory undergone such a complicated operation, and then admitted the newborn's pathology department mostly in satisfactory condition.

Conclusion. Hence, a satisfactory treatment of patients with postoperative direct anastomotic leakage can be achieved by the earlier rethoracotomy, division of esophageal parts and esophagostoma's formation according to G.A. Bairov's double esophagostomy. In the sequel, approximately in 1 year, such a patients need the second stage of surgical treatment – artificial esophagus formation from the abdominal hollow organ: small or large bowel, stomach.

Triple of patients with recurrences of TEF recovered after the secondary operations.

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AN ESOPHAGEAL ANASTOMOSIS LEAKAGE IN CASE OF ESOPHAGEAL ATRESIA

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Purpose: to improve a surgical treatment outcome in cases of the direct esophageal anastomosis leakage in newborns with esophageal atresia. 92 newborns with esophageal atresia were analyzed. A direct esophageal anastomoses were formed in these patients from 1982 till 2012. Postoperative lethality was 10 %. Recurrences of trachea-esophageal fistula were detected in 3 patients, anastomotic leakage and fistula formation – in 4 patients: 2 of them died, 2 else were operated, rethoracotomy, disconnection of esophageal ends and double esophagostomy due to G.A. Bairov were formed.

In conclusion, authors doubted the pleural drainages efficacy in cases of esophageal anastomotic fistulas appearance and recommended the early rethoracotomy, disconnection of esophageal ends in place of anastomosis and formation of 2 fistulas – in the neck and in the abdominal wall – to perform.

Key words: esophageal atresia, esophageal anastomotic leakage

НЕСОСТОЯТЕЛЬНОСТЬ ШВОВ ПИЩЕВОДНОГО АНАСТОМОЗА ПРИ АТРЕЗИИ ПИЩЕВОДА

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Цель: улучшить исходы хирургического лечения при несостоятельности швов прямого пищевода анастомоза у новорожденных с атрезией пищевода.

Анализу подвергнуто 92 новорожденных с атрезией пищевода. Этим больным был наложен прямой пищеводный анастомоз за период с 1982 по 2012 г. Послеоперационная летальность составила около 10 %. У 3 больных возник рецидив трахеопищеводного свища (ТПС), у 4 больных возникла несостоятельность швов анастомоза с формированием свища: 2 пациента умерло и у 2 выполнена реторакотомия, разобщение концов пищевода с выполнением двойной эзофагостомии по Г. А. Баирову.

Авторы ставят под сомнение эффективность дренирования плевральной полости при возникновении свищей пищевода соустья и рекомендуют выполнять раннюю реторакотомию с разобщением пищеводных концов в зоне соустья и выведением их на шею и переднюю брюшную стенку.

Ключевые слова: атрезия пищевода, несостоятельность пищевода анастомоза