operation. X-ray examination observed no permeability disturbance. No cicatricial deformations were observed in Alloplant plastic surgery as post-effects.

Alloplant was used in 5 patients with traumatic rupture of esophagus and its biological properties proved to be excellent. Emergency operations were performed in those five patients: one line interrupted suture was put on the rupture in esophagus wall, after that

Alloplant was fixed with the interrupted suture with the help of a noninjuring needle in an area of the intact part of the esophagus. All the operations were performed without complications. All the patients were discharged being recovered.

Consequently, application of Alloplant in esophagus surgery is justified from the anatomy point of view, Alloplant facilitates the surgery techniques and helps to rehabilitate the integrity of the esophagus wall.

Application of Alloplant when suturing rupture in esophagus permits to strengthen sutures in esophagus and protect them of infection.

REFERENCES


PROPHYLAXIS AND TREATMENT METHODS OF BRONCHIAL FISTULAS AFTER LUNGS SURGERY

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According to the literature on the subject (1,2,3) bronchial fistulas are the most serious complications after the lungs surgery. Frequency of bronchial fistulas development ranges from 2 to 30%, and no tendency for a decrease of these complications is noted. In this report we represent our experience in prophylaxis and treatment of bronchial fistulas.

476 patients suffering from lungs suppurative diseases were operated in the Thoracic Surgery Department of City Clinical Hospital No. 6 (Hospital Surgery Clinic, Bashkir Medical Institute) in the period since 1979 up to date. In 32 patients (6,7%) developed bronchial fistulas in the post-operative period. While analysing the reasons of bronchial fistulas development we established that in 18 cases there was the active infecting of the pleural cavity caused by dissecting pleural adhesions and cutting parietal abscesses while separating lung; marked inflammatory infiltration in bronchus - 4 cases; inflammation exacerbation in another lung - 2 cases.

Technical errors during the operation (long stump of bronchus, injury of the remained part of lung tissues, defects in plasty of bronchus stump) caused development of bronchial fistulas in 7 patients. In one patient the reason was not revealed. First the treatment of the bronchial fis-
tulas was conservative but it proved to be not effective for fistulas 2-3mm in diameter. Also we used obturation of bronchial fistulas by a special alloplant in 8 patients with a large size of bronchial fistulas. This Alloplant was developed in the Russian Eye and Plastic Surgery Centre. Alloplant is a biological material on the base of collagen and collagen-proteoglycans. Alloplant has the following features: low antigenic properties, Alloplant is replaced by recipient’s own tissue (regenerator). The regenerate features can be controlled by Alloplant features.

52 kinds of Alloplants produced in the Centre allow to perform many new plastic and reconstructive operations on various organs. So, to obturate bronchus we used the Alloplant for volume defects with adequate adhesive, hemostatic, bacteriostatic features which is well modelled due to optimum elastic features.

The method of bronchus obturation using the Alloplant above mentioned was developed in our clinic and is performed such as follows: once fibrobronchoscopy is performed and fistula sizes are defined more exactly, indications for its obturation are determined, we perform rigid bronchoscopy under anesthesia, carefully sanate bronchus lumen, dry the bed of fistula passage with tampons and subsequently treat with 70% alcohol. A cone-formed filling is prepared from Alloplant (maximum diameter of the filling must exceed 1,5 times bronchus diameter on the bed level). A thin uniform biological glue "sulfakrilat" manufactured in the laboratory of Bashkir Academy of Sciences is applied over the lateral surface of the Alloplant-filling under visual control. With the first signs of polymerasation the filling is introduced into the bronchus lumen through the bronchoscope and positioned into the bed with some effort. The filling tightness control is tested by pumping out air from the remained part of the cavity. There were no cases of obturator rejection. Using this method we cured 4 patients suffering from bronchial fistulas and pyothorax after lobectomy. The mentioned method of treatment of bronchial fistulas was used successfully in 10 patients.

12 patients were operated repeatedly to close the bronchial fistula. Indications for the operation were as follows: a large size of fistula after pulmonectomy, non-efficiency of the conservative treatment, fail to obturate bronchus by Alloplant filling. We performed reamputation of the bronchus stump through the lateral thorocal access. Bronchus stump was separated within its intact part. Cicatricial tissues were dissected. The stump was sutured by interrupted sutures using atraumatic needle or by mechanic sutures using Apparatus -40 or -60 for Organs Suturing and in addition to it was strengthened by the Alloplant according to the method developed in our clinic. The alloplant of 3-4mm in thickness was modelled according to the size of the sutured bronchus and applied to the bronchus stump. To fix Alloplant sutures were put on: bronchus - Alloplant - bronchus, 4-5 interrupted sutures. According to the above mentioned method 12 patients were operated with good clinical effect, all the patients recovered. This method is commonly used in operations followed by infection of the pleural cavity in lungs suppurative diseases. 8 patients suffering from chronic pulmonary abscess were operated, endoscopic examination showed primary healing of bronchus stump in all patients.

In 1993 after experimental investigations we began to use an original method of bronchus stump plasty using Alloplant with the aim of bronchus fistulas prophylaxis, according to which Alloplant is introduced into the lumen of the bronchus stump and fixed by sutures to the bronchus stump. We do not suture the end of the bronchus stump.

So, the analysis of our material allows to recommend Alloplant for replacement of tissue volume defects in pulmonary surgery: 1) for plasty of the bronchus stump to strengthen it and for bronchus fistulas prophylaxis, 2) as an obturator in endoscopic treatment of bronchus fistulas.

References