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Surgical Collapse Treatment of Destructive Pulmonary Tuberculosis

ABSRTACT

The authors have developed an alternative method of extrapleural surgical collapse thoracoplasty for the treatment of destructive forms of pulmonary tuberculosis. The proposed operational technique meets all requirements of surgical collapse operations in the treatment of respiratory tuberculosis, at the same time has a high cosmetic efficacy and significantly less traumatic in contrast to previously developed traditional ways of thoracoplasty at pulmonary tuberculosis.

Keywords: tuberculosis, thoracoplasty.

INTRODUCTION

To date, tuberculosis is not eliminated in any country in the world and continues to be a complex socio-economic and medical-biological problem [1, 3, 5]. It is noted the growth of drug-resistant forms of a pulmonary tuberculosis, as well as worsening of clinical patterns of the disease. To the greatest extent this refers to the increasing number of patients with the widespread destructive tuberculosis, for which classical lung resection surgery is often unacceptable due to loss of radicalism, excessive functional risk and the inability to prevent the progression of tuberculosis [4]. Surgical collapse interventions are, in essence, reconstructive operations on the chest, associated with resection of a larger or smaller number of ribs and represent a significant injury to the human organism.

MATERIALS AND METHODS

Currently in thoracic surgery, surgery of tuberculosis in particular, as surgical collapse operations are used most often: extrapleural upper back thoracoplasty [2], which consists in removing the I, II, III ribs and resection of the posterior-lateral segments IV, V, VI, VII ribs, and 5-costal osteoplastic thoracoplasty suggested by the Novosibirsk TB Research Institute [3], consisting in resection of the posterior segments of the top four or five edges by taking him with them and commit to VI edge (when the intersection of I-II ribs in the sternum of additional parasternal access). A.F. Kravchenko developed an innovative methodology of thoracoplasty with lung fixation, after completing extrapleural pneumolysis, using a grid, a pre-fabricated type «hammock». In this case the top four ribs are deleted as well.

The disadvantage of the first type of operation is pronounced cosmetic defect consists in the deformation of the shoulders and chest, and very high traumatism. The second type of transactions creates a cosmetic defect is deepening and subclavian pits on the side of operation), which patient is a negative psychological impact, there is considerable trauma associated with transferring ribs. The third type of operations allows reduce the invasiveness of the procedure because of the removal of ribs, but manufacturing and fixation of the mesh are difficult.

In connection with the foregoing, we have developed an alternative method of operation, isolated from a cosmetic defect and corresponding to all necessary requirements for collapse surgery intervention (patent R.F № 2470604).

The proposed surgery is the following: from paravertebral access (linear incision of up to 10 cm) exposed the plate frame II-V edges intersect the spine and resection III and IV ribs from the spine to the mid-axillary line. Next, extrapleural pneumolysis dome to the root of the lung, with the imposition of seams, diminishing the amount of pleural cavity, and pleuropexion to the posterior segment of VI rib. This creates extrapleural cavity up to 300 - 400 cm³. Of complementary access at the edge of the latissimus dorsi, linear cut of up to 10 cm is allocated a certain mass, corresponding to the volume of the formed extrapleural cavity toracodorsales muscular flap on a vascular pedicle, with a node in the armpit. In the proximal part of the armpit forming a tunnel under a large circular muscle, then toracodorsales muscular flap moves through



the tunnel formed and intercostalis defect, fully covering the previously formed extrapleural cavity. For fixing the flap is imposed 1-2 leading seam in dorsal corner of the intercostal window. Extrapleural cavity is drained with rubber tube.

The proposed method of musculoskeletal surgery at destructive forms of pulmonary tuberculosis has the following advantages over the traditional methods:

1. the less pronounced operating trauma
2. complete filling of viable thoracodorsal muscular flap of any size of extrapleural cavity formed after pneumolysis, due to which we prevent recurrence of the specific process in the lung
3. none post cosmetic defect (deformation of the chest) significantly improves the quality of life and promotes optimal social adaptation of pulmonary tuberculosis patients after surgical treatment.

RESULTS AND DISCUSSION

The above presented operative method of treatment is used in the surgical thoracic Department «Antituberculosis dispensary» from February 2010. The proposed surgical technique was applied in 22 patients with destructive pulmonary tuberculosis. Postoperative complications were observed in 2 (9%) patients in the form of a small subcutaneous seroma on site of thoracodorsal flap. Complications were temporary and were liquidated by puncture and aspiration.

The results of operations were evaluated in 4 months. In 21 (95,5%) abacillation and complete closure of cavernous lesions of the lung tissue with the formation of pneumosclerosis were achieved, in one case a partial positive effect was marked: abacillation, oral disintegration decreased, but still remained, therefore the second stage was the resection of upper lobe of the right lung. In all cases there was positive cosmetic effect (symmetric chest).

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