Surgery for the treatment of the tuberculosis-destroyed lung: to protect or not to protect the bronchial stump?

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We read with interest the paper by Bai et al. [1] regarding the efficacy of surgery, mainly pneumonectomies, in the treatment of tuberculosis (TB)-destroyed lungs and we congratulate them on their results. One of the most dreaded complications after pneumonectomy is the bronchopleural fistula (BPF), and this is particularly true for pneumonectomies performed for infectious diseases including TB. The authors report a very low incidence of BPF, but they do not give information about the method, if any, they use to reinforce the bronchial stump. It should be of great interest to know whether or not they protect the stump and to know which criteria they use to decide who can benefit from the bronchial stump coverage. For Wang et al. [2], the incidence of BPF was 9% when parietal pleura or the pericardium were used to protect the bronchial stump, and it was as high as 36% when they were not. According to Pomerantz [3], positive sputum at the time of surgery and polymicrobial contamination increases the risk of BPF, and he suggests using muscle flaps to protect the bronchial stump. In our experience, we used with satisfaction a muscle flap of the serratus anterior or a split latissimus dorsi flap [4] in all sputum-positive patients, most of whom also had a polymicrobial contamination of the destroyed lung. Both these flaps can be easily and quickly harvested and add only a minimal morbidity to the operation.

REFERENCES

I thank Terzi et al. [1] for their comments on our article [2] and also thank EJCTS for giving me this opportunity to answer this question.

Bronchopleural fistula (BPF) is a most serious complication in patients with tuberculosis-destroyed lungs who have undergone pneumonectomy. Halezeroglu et al. [3] consider that tuberculosis and preoperative empyema lead to BPF. We believe that the risk factors for BPF are the surgical suture technique, endobronchial tuberculosis, multidrug-resistant tuberculosis and pleural space infection, although postoperative BPF after pneumonectomy for tuberculosis-destroyed lungs has been decreasing steadily. The prevention of postoperative BPF in patients with tuberculosis-destroyed lungs is very important in chest surgery.

The surgical process for a bronchial stump includes suturing and protection. The suturing includes full-thickness suture, stapler suture and so on. Pleural tissue, pericardial tissue and muscle flaps are used to protect the bronchial stump. But when a tuberculosis-destroyed lung is combined with endobronchial lesions, the suture line of the full-thickness suture and the stapler of the stapler suture for endobronchial tuberculosis may cause a ‘drainage effect’, which could lead to an infection in the chest. So, we think that the ‘drainage effect’ may lead to a BPF. Endobronchial tuberculosis has been demonstrated in up to 18% of tuberculosis patients. Vester et al. [4] think that the stapler is contraindicated when the bronchus is thickened, inflamed or of insufficient length. Thus, we think that the way in which we suture is more important than how the bronchial stump is protected. We suggest that the muscle flap that Terzi et al. [5] use to protect a bronchial stump could be used in the repair surgery after BPF.

The extramucous suture technique for bronchia is a method that does not cross the bronchia mucous. In 1963, Xin et al. [6] reported 509 cases (including 487 of pulmonary tuberculosis and 22 of pulmonary suppuration) who underwent pulmonary resection. For the extramucous suture in a bronchia group of 200 patients, the incidence of BPF was 0%. For the full-thickness suture in a bronchia group of 200 patients, the incidence of BPF was 3.0% (six cases). For the stapler suture in a bronchia group of 109 patients, the incidence of BPF was 4.5% (five cases).

The way we choose to suture is according to the situation of the mucous membrane. In our hospital, the extramucous suture technique has been routine for patients with endobronchial tuberculosis for half a century, and the incidence of BPF is very low. But reinforcing the bronchial stump with the surrounding tissues can decrease the incidence of postoperative BPF in tuberculosis-destroyed lungs. In addition, standard pre- and postoperative antituberculosis treatments and a careful operation often lead to satisfactory surgical effects.

When patients suffer from multidrug-resistant pulmonary tuberculosis and endobronchial tuberculosis, selective operation indication, adequate preoperative antituberculosis treatment and endobronchial ultrasonic atomization are needed.

REFERENCES


LETTER TO THE EDITOR

Is a radially self-expanding valved stent with neochondal support enough for better fixation in the mitral position?

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The publication by Iino et al. [1] highlights their investigation of the outcomes of a new surgical approach for mitral valve replacement with a self-expanding valved stent with neochondral construction in the pig heart. Iino et al. performed a mitral valve replacement with the valved stent in six pig hearts by means of the transapical implantation technique. Afterwards, they assessed haemodynamic stability and valve function, immediately after implantation (n = 6), 4 weeks (n = 4) and 8 weeks (n = 1),