Videothoracoscopic Ligation of Bulla via Single Utility-Incision for Spontaneous Pneumothorax: A Convenient Surgical Approach in a Developing Country

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Operative Technique

Patient positioning and port placement

Patients were selected for this technique on the basis of the recurrent spontaneous pneumothorax and sometimes primary spontaneous pneumothorax, from poverty-stricken areas in China. The patient is placed in the maximally flexed lateral decubitus position; the surgeon and the assistant are both positioned on the anterior (abdominal) side of the patient, with the surgeon positioned cranially. This setup is independent of all the kinds of pneumothorax. Two incisions are used: a 3 cm-5 cm utility incision without rib spreading, and a camera port that is later used for chest tube placement (Figure 1). The soft tissues of the utility incision sometimes need to be

Abstract

The ideal video thoracoscopic surgery for spontaneous pneumothorax should maximize the benefits of minimally invasive surgery but minimize the surgical cost; thereby reducing chest wall trauma using the fewest incisions and the least money possible without compromising therapeutic efficiency. Described here include a complete single utility-incision thoracoscopic approach and bulla ligation with a deep hypodesmus technique, so as to reduce the use of the multiple endostapling cartridges typically required during bulla resection. 31 patients with spontaneous pneumothorax were submitted to this technique during the past 6 years. All the processes were smoothly without any prolonged air leakage and recurrence up to now. We believe this technique can be considered a valid alternative to stapling technology during video thoracoscopic procedure for spontaneous pneumothorax, and could be widely recommended in the developing countries.

The ideal video thoracoscopic surgery for spontaneous pneumothorax should maximize the benefits of minimally invasive surgery, thereby minimizing chest wall trauma using the fewest incisions possible without compromising therapeutic efficiency. The routine utilized endostapling devices would add to the cost of the operation and present potential malfunction risks from dislodgement, user errors, mechanical failures, and application difficulties [1,2]. In light of our preliminary experience with a simple and secure ligation technique facilitating minithoracotomy [3], we also tested this approach in the case of pulmonary blebs or bullae management during thoracoscopic surgery. We hypothesize this non-GIA technique will reduce surgery costs. Here we describe the technique and the early outcomes afterward.

Keywords

Single-Access, Videothoracoscopic surgery, Bulla ligation, Pneumothorax
highly expensive instruments must be questioned in depth. As early as 2009, we developed a novel knot-tying method promotes the expeditious formation of secure square knots in deep-seated operating fields via a small incision [3]. Now, we believe it can be considered a valid alternative to stapling technology during videothoracoscopic procedure sometimes. Most patients in this study came from remote, poverty-striking rural areas; they actually could not afford the endostapling devices. This cost-saving approach, for them, was the one and only way to cure their disease with minimally invasive surgery.

Not with standing three ports thoracoscopic surgery with stapling technology for spontaneous pneumothorax has been well established, our single utility-incision thoracoscopic technique without rib spreading can be considered a valid alternative in this setting. The use of this technique could potentially lead to decreased surgery costs by reducing the use of the multiple endostapling cartridges typically required during blebs or bullae resection. Larger prospective series with long-term results and cost/benefit analyses are necessary to better define the utility of this technology before its use can be widely recommended in the developing countries.

References