



AB004. Choices of minimally invasive thoracic incisions: the experience from Shanghai Renji Hospital

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Abstract: Numerous incisions are used in thoracic surgery. The change of thoracic incisions from thoracotomy, conventional multi-port video-assisted thoracoscopic surgery (VATS) to the recent uniportal VATS and subxiphoid surgery shows the evolution of minimally invasive thoracic surgical approach. The selection of the surgical incision is the responsibility of the surgeon who needs the best possible exposure to complete the proposed operation. Indeed, a poorly planned incision is likely to lead to a difficult and frustrating operation, increasing the chances of technical misadventures. Careful consideration of the goals of the operation and individual patient characteristics must be kept in mind before laying scalpel to skin. Nowadays, minimally invasive thoracic incisions become lesser and smaller. More and more surgeons are interesting in how to develop their incisions. Therefore, a clear understanding of the choices of incisions is important if one is to achieve maximum use of the incision. In this paper, we introduce our experience and some tips and tricks in choosing minimally invasive thoracic incisions. Currently, the minimally invasive thoracic incision must firstly be acceptable to the patient, who will have postoperative pain or may suffer from long-term muscular, neurologic, or even cosmetic disabilities. In order to achieve

the aesthetic appearance of the incision and reduce the influence of postoperative quality of life, every thoracic surgeon must understand the direction of skeletal muscle in the chest wall and the distribution of intercostal nerve, so as to avoid the damage as possible. Meticulous surgical technique will minimize local wound problems (wound infection, hemorrhage of incision, implantation metastasis of incisions, lung herniation, etc.). We think appropriate minimally invasive thoracic incisions should facilitate the surgery with both surgical vision and technique maneuver. In the case of uniportal VATS pulmonary resection, for instance, the locations of incisions vary according to surgeon preference. Whereas, incisions must be accurately positioned to allow for the best possible exposure to the necessary area, and to facilitate technically challenging parts of the operation. The selected incision should not only meet the anatomy of the hilar structure, but also facilitate lymph node dissection. Moreover, preoperative imaging studies may always help direct the location of the incision. Indeed, the selection of the surgical incision also is based on the surgeon's experience and familiarity with the exposure that a particular incision provides. Here, we firstly introduce the evolution of minimally invasive thoracic incisions at our department. Then, the characteristic of various incisions and our unique experience will be described. At last, we will discuss a few potential improvements of minimally invasive thoracic incisions and give a glimpse into the future.

Keywords: Video assisted thoracoscopic surgery (VATS); uniportal thoracoscopy; single port thoracoscopy; lung resection; pulmonary lobectomy; subxiphoid VATS

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