

Muscle-sparing Axillary Thoracotomy



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The standard posterolateral thoracotomy provides excellent exposure to the chest and has traditionally been the incision of choice for major intrathoracic operations. However, this approach comes at the cost of muscle-splitting, with significant postoperative pain and impairment in function, particularly in elderly patients. Consequently, muscle-sparing approaches have been met with enthusiasm due to improvements in postoperative pain, morbidity, and cosmesis. Although concerns regarding exposure initially limited the use of this incision, advances in technology and experience have led to more widespread use of the muscle-sparing approach. Today, the muscle-sparing thoracotomy is the incision of choice for many surgeons, as it can be used as an adjunct to video-assisted thoracoscopic surgery and has successfully been employed in complex thoracic procedures.

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Successful thoracic surgery relies on adequate exposure to the chest. The standard posterolateral thoracotomy incision provides excellent exposure for nearly all intrathoracic procedures, with adequate functional and cosmetic results. However, this incision comes at the price of muscle division and significant postoperative pain.

Muscle-sparing alternatives to the posterolateral thoracotomy have been met with enthusiasm by many surgeons. These approaches are advantageous technically due to increased ease and speed of chest entry and closure, and have the benefit of leaving the major thoracic muscles intact. Although no study has definitively shown improved long-term outcomes with a muscle-sparing compared to a muscle-dividing approach, postoperative improvements in pain, shoulder function, forced expiratory volume in 1 second, and forced vital capacity have been reported.¹ Additionally, cosmesis is improved as these incisions are typically shorter and lower profile than the standard posterolateral thoracotomy.

Initially underutilized due to limitations of exposure, the muscle-sparing approach has garnered favor more recently due to improvements in thoracoscopic instrument technology (eg, stapling devices) and increased surgical experience. This approach provides excellent exposure to the

hilum of the lung, and consequently works for most thoracic procedures including lobectomy, pneumonectomy, and esophagectomy. Exposure to the apical or diaphragmatic areas is more limited, and thus procedures such as posterior chest wall resections or resection of Pancoast tumors may be better-suited for a standard posterolateral thoracotomy. Although some authors have argued that complex resections, such as bronchial sleeve resections or pulmonary arterial reconstructions, should not be performed via this approach, successful use of this incision for these procedures has been documented.²

In the video-assisted thoracoscopic surgery (VATS) era, the muscle-sparing approach can be advantageous if problems are encountered during a thoracoscopic procedure. One port site can be incorporated into the vertical skin incision, and another can be used for instrumentation (eg, insertion of forceps or stapling devices) or eventually become the chest tube site. Additionally, a thoracoscope can be inserted into this port to improve visualization during the procedure, allowing greater access to the lung apex, and to allow both surgeons, students, or operating room personnel to follow the operation. The operative technique is described in detail in the pages that follow (Figs. 1-9).

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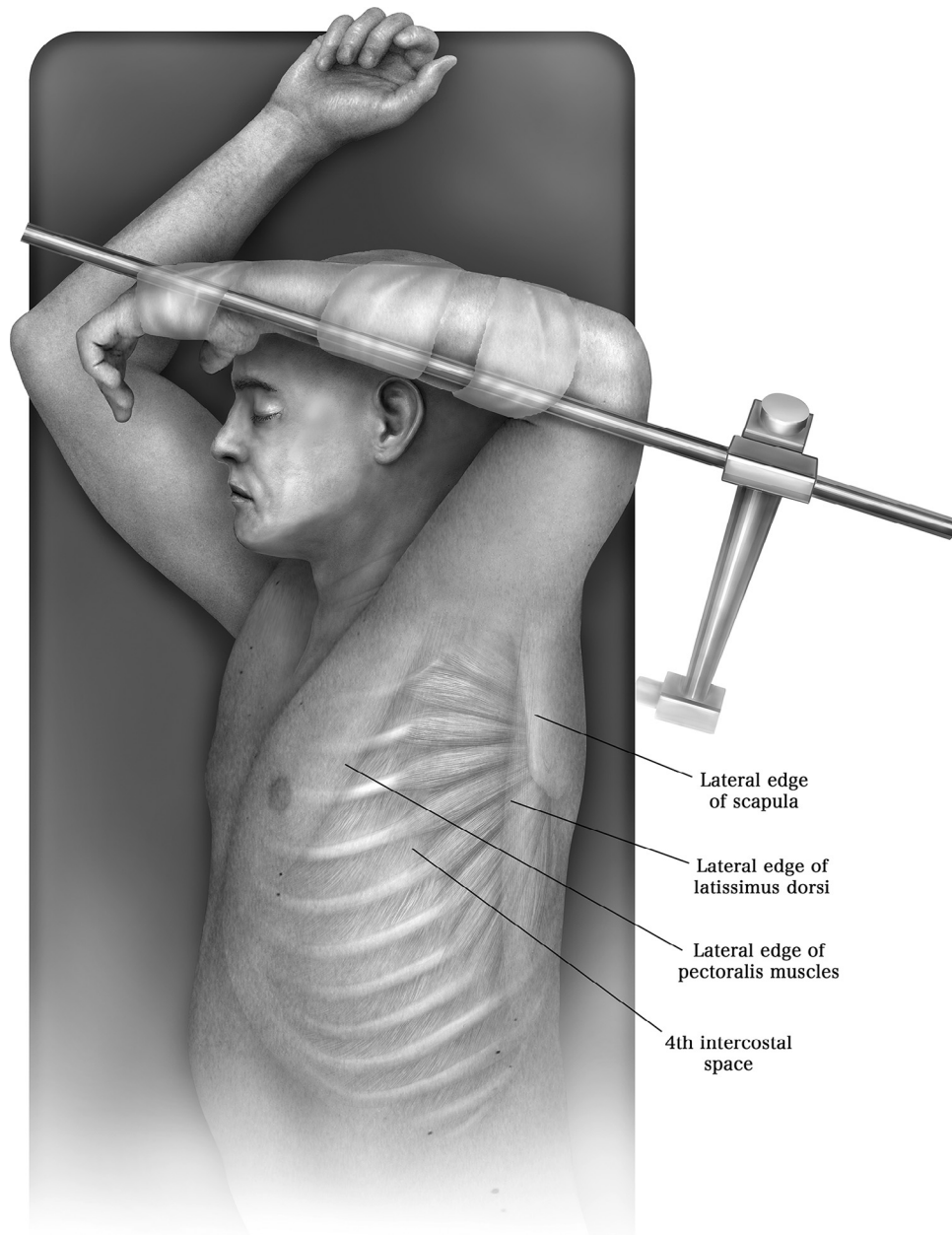


Figure 1 The patient is positioned in the lateral decubitus position on the operating table and rotated slightly posteriorly. The axilla is opened by flexing and abducting the ipsilateral arm to 90 degrees. The sterile field is extended posteriorly to the spine to allow for conversion to standard posterolateral thoracotomy if necessary.

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