

Thoracotomy Through the Auscultatory Triangle

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We present a technique of thoracotomy through the auscultatory triangle. Good access to the thoracic cavity is obtained, and both latissimus dorsi and serratus anterior muscles are preserved. There is reduced postoperative morbidity.

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The standard posterolateral thoracotomy incision, with division of the latissimus dorsi and serratus anterior muscles, may cause substantial perioperative morbidity and long-term disability [1-3]. An alternative that we have found quite satisfactory is thoracotomy through the auscultatory triangle, with preservation of both of these muscles. We believe that other thoracic surgeons will find this technique useful.

Technique

Selective endobronchial intubation and single-lung ventilation is used in most cases. The patient is placed in the lateral decubitus position and the usual incision for a posterolateral thoracotomy is made (Fig 1, inset). The key to adequate exposure is full mobilization of the latissimus dorsi and serratus anterior. The superficial surface of the latissimus is dissected from the subcutaneous tissue in a plane just above the muscle fascia with the electrocautery. The auscultatory triangle is identified and the fascia is incised, thus exposing the ribs and intercostal muscles (Fig 1). The posterior border of the latissimus is freed superiorly and inferiorly. A retractor is placed beneath the latissimus and the deep surface of the muscle is dissected. The serratus is likewise mobilized, and the scapula is retracted superiorly (Fig 2).

The pleural cavity is generally entered through the fifth intercostal space with division of the intercostal muscles as far anteriorly and posteriorly as possible. A rib can be resected if further exposure is necessary (Fig 3).

Before closure, an intercostal block is performed with bupivacaine hydrochloride. The ribs are reapproximated with pericostal sutures. When the retractors are removed the muscles return to their usual position. The fascia is closed along the posterior border of the latissimus. The subcutaneous tissue and skin are closed in layers.

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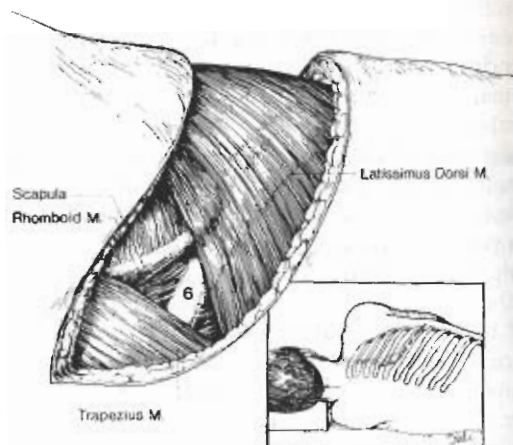


Fig 1. Patient position and placement of the incision are shown (inset). The latissimus dorsi is completely freed. The ribs and intercostal muscles are exposed in the auscultatory triangle.

Comment

The standard posterolateral thoracotomy provides excellent exposure for most operations in the chest; unfortunately, there are some serious drawbacks to this approach. Division of the latissimus dorsi and serratus anterior results in denervation of substantial portions of these muscles. Consequently, there is weakness and restricted mobility of the upper extremity. Also, closure of these muscles is time consuming, and if there is subsequent dehiscence of the wound a large portion of the bony chest wall may be exposed. To avoid these problems,

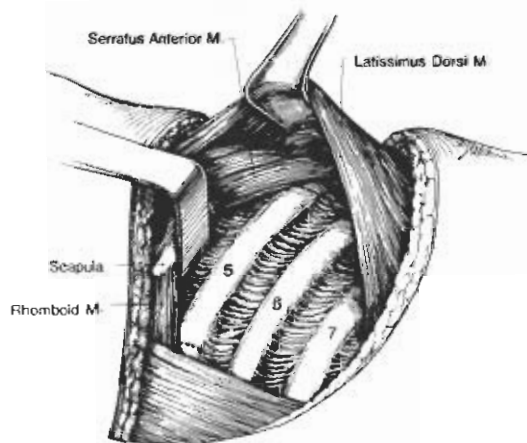


Fig 2. The mobilized latissimus dorsi is retracted anteriorly and the scapula is retracted superiorly.

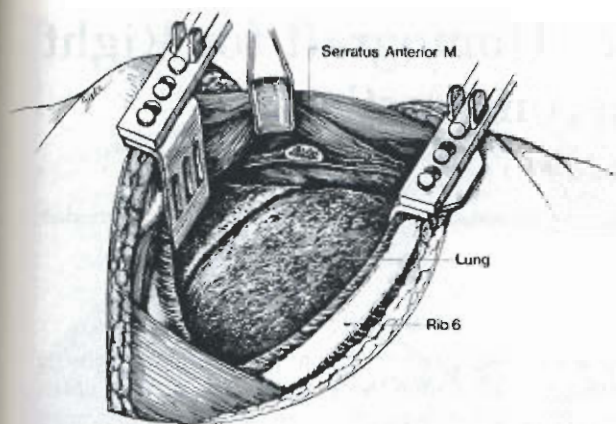


Fig 3. The chest is entered through the fifth intercostal space. Maximal exposure is achieved by resection of a rib.

muscle-sparing thoracotomy has been advocated, and several different methods have been described [1-5].

We present a technique that involves enlargement of the triangle of auscultation by anterior retraction of the latissimus and serratus and superior retraction of the scapula. As no muscles are divided or denervated, shoulder function is recovered rapidly. A paraplegic man who underwent a right lower lobectomy through the auscultatory triangle was able to transfer himself from bed to chair within several days of operation. We feel that whenever possible, muscle-sparing thoracotomy should be used in patients such as paraplegics, amputees, manual laborers, and athletes who are dependent on maximal arm function.

Auscultatory triangle thoracotomy cannot be used in all circumstances. Exposure may be difficult in patients who are obese or heavily muscled, and it may be inadequate for major thoracic vascular procedures. Nazarian and associates [5] state that thoracotomy through the auscultatory triangle is not appropriate in older patients. However, we have successfully used this approach in patients in the sixth decade of life. Exposure can be enhanced by resection of a rib, and if necessary, the incision can be converted to a formal posterolateral thoracotomy by transection of part or all of the latissimus.

In a recent editorial, Kittle [1] asked "Is it not now time for further refinement and consideration of the thoracotomy incision?" We believe that it is time, and that auscultatory triangle warrants serious consideration.

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