Advanced medical thoracoscopy is a subset of medical thoracoscopy that includes less frequent and more complex applications, such as:

1. The management of parapneumonic pleural effusion and pleural empyema.
2. The thorascopic lung biopsy.
3. The thorascoscopic sympathectomy.

These methods are considered non-routine and are applied by expert pulmonologists. They are often pursued by those who have mastered basic techniques and wish to develop them further.

**Thoracoscopy**

For years, thoracoscopy has been used in pleural effusion due to lung infection, as an alternative to thoracotomy. It allows the mechanical removal of infected material and permits lung re-expansion. It is possible to open multiple loculations and aspirate the purulent liquid, removing the fibrinous adhesions, including the layer on visceral pleura. Therefore, it is possible to have a single cavity in which, using an accurately positioned chest tube, subsequent local treatment is facilitated with antiseptic solutions or fibrinolytics. Moreover, the possibility to perform pleural biopsies allows for more precise aetiological definition of the disease and aids in the diagnosis of occult infections, such as tuberculosis or tumours causing pleural effusion. Most thorascopic empyema treatments are performed and described by surgeons using classical three-entry port intervention under general anaesthesia and double-lumen intubation.

However, it is important to remember that thoracoscopy in empyema may be performed by expert medical thoracoscopists. For example, in one study, deaths also occurred. Therefore, thoracoscopy is undoubtedly useful in the treatment of infection of the pleural space, particularly in patients with severe comorbidity, deaths also occurred. In surgical thoracoscopy there is total agreement about the advantages of VATS over throracotomy, in terms of lower cost, shorter hospitalisation, and better cosmetic results with less surgical sequelae. The medical thoracoscopy experiences outline the mini-invasive character of the procedure, together with lower cost compared to VATS and the fact that it can be used with frail patients at high risk from surgery.

Complications occurred in direct correlation with the complexity of the cases treated and were represented mainly by prolonged air leakage and bleeding, with very varied incidence, between 16% and 0% [1]. In some surgical series, including patients with severe comorbidity, deaths also occurred. Therefore, thoracoscopy is undoubtedly useful in the treatment of infection of the pleural space, particularly in patients with severe comorbidity, deaths also occurred. In surgical thoracoscopy, the treatment of the illness without thoracotomy, even though until now sufficiently large randomised studies on the method have not been carried out. As an intermediate drain procedure between positioning a drain tube and VATS, medical thoracoscopy can play an important role and is characterised by its efficacy and low cost. It should be carried out without delay in the treatment of empyema and is recommended for patients in poor health and at high surgical risk.
Recommendations

- Thoracoscopy is indicated in loculated parapneumonic effusion and empyema (Grade B).
- Chest ultrasonography is the method of choice to identify loculations (Grade C).
- Medical thoracoscopy, as a drainage procedure which is intermediate between tube thoracostomy and VATS, is significantly lower in cost and can avoid surgical thoracoscopy under general anaesthesia (Grade C).
- It is essential that medical thoracoscopy is performed early in the course of empyema and advisable in particular for frail patients at high surgical risk (Grade C).

References


Thoracoscopic Lung biopsy

Forceps lung biopsy during thoracoscopy under local anaesthesia has been used for many years by pulmonologists and has been described frequently as an integral technique of medical thoracoscopy [7-11]. With the advent of video-assisted thoroscopic surgery (VATS) its employment has been considerably reduced in particular in lung nodules and in diffuse lung disease. However the biopsy of visceral pleura and lung in patients with pleural effusion and visceral pleura involvement or associated lung disease (mesothelioma; metastatic tumour; suspected carcinomatous lymphangitis; suspected asbestosis) still maintains its importance and significance. In particular, in mesothelioma, the identification of visceral pleura involvement by biopsy is crucial to establish the stage of development of the disease [12].

Recommendations

- Thoracoscopic forceps lung biopsy is indicated in patients with pleural effusion and associated lung disease (Grade C) Thoracoscopic forceps lung biopsy is indicated to evaluate the visceral pleura involvement in mesothelioma (Grade C).

References


Sympathectomy

Thoracoscopic sympathectomy, the anatomical interruption of the thoracic sympathetic chain by means of thorascoscopic techniques, more frequently performed and described by surgeons, can safely be performed by trained interventional pulmonologists [13-18]. It is a minimally invasive, accepted intervention for patients with a variety of autonomous nervous system disturbances with short- and long-term excellent results. It should be carried out by expert and highly trained thorascopists [19] and carried out in specialized centres with sufficient expertise in close collaboration with thoracic surgeons.

Recommendations

- Thoracoscopic can be performed safely by trained interventional pulmonologists (Grade C).
- Thoracoscopic sympathectomy carried out in specialised centres with sufficient expertise in close collaboration with thoracic surgeons (Grade C).

References


Summary of Recommendations

- Thoracoscopy is indicated in loculated parapneumonic effusion and empyema (Grade B).
- Chest ultrasonography is the method of choice to identify loculations (Grade C).
- Medical thoracoscopy, as a drainage procedure which is intermediate between tube thoracostomy and VATS, is significantly lower in cost and can avoid surgical thoracoscopy under general anaesthesia (Grade C).
- It is essential that medical thoracoscopy is performed early in the course of empyema and advisable in particular for frail patients at high surgical risk (Grade C).
- Thoracoscopic forceps lung biopsy is indicated in patients with pleural effusion and associated lung disease (Grade C).
- Thoracoscopic forceps lung biopsy is indicated to evaluate the visceral pleura involvement in mesothelioma (Grade C).
- Thoracoscopic can safely be performed by trained interventional pulmonologists (Grade C).
- Thoracoscopic sympathectomy carried out in specialised centres with sufficient expertise in close collaboration with thoracic surgeons (Grade C).