LIMITATIONS OF THORACOSCOPY

There is certain condition in which thoracoscopic procedures could not be performed. There can be classified into relative and absolute contraindications:

• Absolute contraindications:

(A)Inability tolerate one-lung ventilation:

Thoracoscopic procedure is performed under general anesthesia using a double lumen endotracheal tube to allow the lung ventilation that leads to collapse of the ipsilateral lung which is mandatory for proper thoracoscopic procedure. There are certain conditions in which the patient cannot tolerate one lung ventilation.

1. Severe chronic or acute respiratory insufficiency.

2. Ventilatory dependent patients.

3. Poor Pulmonary function tests especially FEV_1.

(B) Blood coagulopathy dyscrasies.

(C) Dense pleural adhesions (Landreneau et al., 1993).

(D) Huge Mass more than 5 cm.

(E) Hilar mass especially subcarinal.

(f)Malignant tumor with vascular infiltration.

• Relative contraindications:

Dense pleural adhesions are contraindication for thoracoscopy, but mild adhesions that encountered during digital palpation after the first thoracoscopic port incision, these can be dissected with finger, dissector and scissors.

COMPLICATIONS OF THORACOSCOPY

With the advent of video-assisted techniques and endoscopic equipments that allow the performance of standard thoracic surgical procedures in a less invasive way. It is important to look closely to the complications that result from these procedures **,**with the experience of the surgeons and the anesthesiologist, it is easier to determine whether a thoracoscopic procedure is appropriate for the patient and technically feasible for the surgeon **.**

MORBIDITY:

The incidence of postoperative complication after VATS intervention are about 10% in most series .

Type of complications:

1. Prolonged air leak is the most frequent post operative complications in

most series.

2. Bleeding is the most serious complication in some cases. It need urgent conversion to thoracotomy to control bleeding. It is related mainly to lung resection (segmentectomy, lobectomy) and especially from pulmonary artery. Bleeding occurs either during applying the stapler to the vessels which often creates tension along the branches that can lead to avulsion. Also Bleeding can also occur because of equipment failure (stapler). the stapler cut but fails to staple the vessels. This is the situation where urgent thoracotomy must be done to control bleeding.

Other causes of bleeding:

a. After decortication for a trapped lung.

b. Intercostal bleeding from a port site.

c. Subclavian artery injury during adhesiolysis

3.Respiratory insufficiency espeeially in patients with diffuse parenchymal lung disease undergoing VATS lung biopsy.

4. Wound infection.

5. Pneumonia.

6. Trocar injury to the lung due to the presence of adhesions.

7. Empyema

8. Other rare complications including arrhythmia, kidney or liver failure, myocardial infarction …….etc **.**

MORTALITY:

Hazelrigg, 1993, reported no intraoperative deaths and no death was related to an intraoperative complication. However, **Harris, 1995**, reported only one out of 182 patients thoracoscopy related death due to extensive lung lacerations. Reported in Hospital postoperative mortality rates ranged between 0% and 2%. The cause of death is always the patient's original disease process and death is largely involving older patients with poor general condition or with malignancy**.**

CONVERSION TO OPEN THORACOTOMY:

The incidence of conversion from VATS procedure to open one is variable and ranging from 4.1% in the study of ***Kaiser and Bavaria (1993)*** to 20% in that of **Hazellrig** and Colleagues **(1993**) depending on the nature of the procedure.

104

The reason for conversion is usually the need of further parenchymal resection (lobectomy, segmentectomy), inability to find a lesion too large, too difficult as regard its location for VATS, the diagnosis of a contraindication for VATS that was nor preoperatively diagnosed (see below), or the presence of the occurrence of a problem during the work as equipment failure and major bleeding (this is the situation where urgent thorcotomy is needed to control bleeding).

Conversion should be always considered as a variation of the procedure and not as a complication or a failure. It is necessary when the VATS procedure becomes too dangerous or when it is believed that the VATS result would be inferior to that achieved by an open procedure. There should be no feeling of defeat when the chest has to be opened.

105