



ROLE OF MEDICAL THORACOSCOPY IN MULTI-LOCULATED EFFUSIONS AND EMPYEMA.

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ABSTRACT

Background: Medical thoracoscopy (MT) has consistently been demonstrated to be superior to fluid cytology and 'blind' closed needle biopsy with a sensitivity of up to 95%. MT(also known as pleuroscopy) was popularized in 1910 by a Swedish internist, Hans Christian Jacobaeus. MT is a minimally invasive single- port endoscopic technique using rigid and semirigid thoroscopes that offers direct visualization of pleural surfaces, as well as channels to perform diagnostic and therapeutic procedures. Patients typically receive moderate sedation and breathe spontaneously throughout the procedure, without positive pressure ventilation. **Methods:** Observational study **Results:** A total of 60 Medical Thoracoscopies were carried out during the study period, out of which 45 patients were with multi-loculated effusions (35 male, 10 female). 15 cases of Empyema (12 males, 3 females). **Conclusions:** Our study observed that Multi-loculated effusions and Empyema (Exudative and Fibropurulent stages) could be treated with Medical Thoracoscopy. But patients with very thick parietal pleura and long standing empyema required VATS with surgical decortication.

KEYWORDS : Medical thoracoscopy, empyema, parapneumonic effusion, Decortication.

INTRODUCTION

- Medical thoracoscopy (MT) has consistently been demonstrated to be superior to fluid cytology and 'blind' closed needle biopsy with a sensitivity of up to 95%(1). MT(also known as pleuroscopy) was popularized in 1910 by a Swedish internist, Hans Christian Jacobaeus(2).
- MT is a minimally invasive single- port endoscopic technique using rigid and semirigid thoroscopes that offers direct visualization of pleural surfaces, as well as channels to perform diagnostic and therapeutic procedures. Patients typically receive moderate sedation and breathe spontaneously throughout the procedure, without positive pressure ventilation. The most commonly employed semi-rigid thoroscopes have a 2.8 mm working channel through which standard flexible biopsy forceps are used. MT is relatively a safe procedure.
- Major complications of MT (hemorrhage, bronchopleural fistula and/or persistent airleak, postoperative pneumothorax, and pneumonia) and minor complications (subcutaneous emphysema, minor hemorrhage, operative skin site infection, fever)[3].
- Pleural effusions which develop secondary to pneumonia or lung abscess are referred to as parapneumonic effusions (PPEs). PPEs are classified into three stages, which form a continuous spectrum.
- The three stages include exudative stage, fibrinopurulent stage and organized stage.

Drainage becomes progressively more difficult as more loculations develop. Effective drainage prevents the organization and formation of a thick pleural peel referred to as an organized stage, which often requires surgical intervention for complete cure[4].

- Medical thoracoscopy in particular helps breaking the loculations under direct vision, thereby facilitating complete clearance.

AIMS AND OBJECTIVES

The aim of this study was to report our experience and analyse the efficacy and safety of Medical Thoracoscopy in patients with Multi-loculated effusions and Empyema.

METHODS

We performed an observational study on Medical Thoracoscopy on patients with Empyema and Multi-loculated effusions at our medical college under conscious sedation between October 2020 to March 2022.

DISCUSSION

In our study we assessed the efficacy and safety of medical thoracoscopy of medical thoracoscopy in cases of multiloculated effusions and empyema after stratification by chest ultrasonography. Treatment success rate with medical thoracoscopy is 93.4% in our study. Medical thoracoscopy is similar to chest tube insertion with advantage of pleural space visualization, biopsies can be taken, multiple loculations can be converted into single communicating cavity and adequate drainage of fluid can be done. It has advantage over VATS as it is less invasive, cheap procedure, better tolerated in frail patients. Failure rate is only 6.6% in our study requiring CT surgeon involvement. In countries where Tuberculosis is endemic, it is very important to differentiate between two major causes of exudative pleural effusion i.e. malignancy and Tuberculosis. In resource limited settings medical thoracoscopy is valuable in treating cases and performed with minimal requirements.

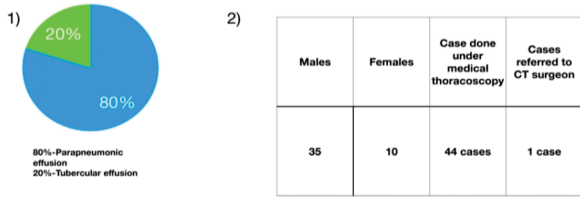
RESULTS

- A total of 60 Medical Thoracoscopies were carried out during the study period, out of which 45 patients were with multi-loculated effusions (35 male, 10 female). Average duration of symptoms was 15 days. The aetiology of effusions included Complicated Para pneumonic effusions (80%) and Tubercular (20%).
- For all cases, Ultrasound chest was done and complete adhesions were noted for 38 cases, and partial adhesions were noted in 7 cases. Out of these, 1 patient required decortication, remaining 44 cases were successfully treated with Medical Thoracoscopy. There were no major complications noted except for 2 cases, were Desaturated.
- 15 cases of Empyema (12 males, 3 females) for which Ultrasound chest was done. Out of 15 cases, 3 cases were referred to a CT surgeon for Decortication (2 males, 1 female). Remaining 12 cases were treated successfully. For 1 patient, air leak was noted which subsided by itself after 2 days. No mortality noted. After successful

procedure, average time for chest tube removal was 6 days (3-15 days range) and time of discharge was 7 days.

Statistical Analysis

Multi loculated effusion- Total cases



Statistical Analysis EMPYEMA-Total cases -15

Males	Females	Case done under medical thoracoscopy	Cases referred to CT surgeon for decortication
12	3	12 cases	3 cases

CONCLUSIONS

- Our study observed that Multi-loculated effusions and Empyema (Exudative and Fibropurulent stages) could be treated with Medical Thoracoscopy.
- But patients with very thick parietal pleura and long standing empyema required VATS with surgical decortication.

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