# Thoracoscopic Sympathectomy Versus Open Technique

**Thesis Submitted for Partial Fulfillment of M.D. Degree in General Surgery**

BY

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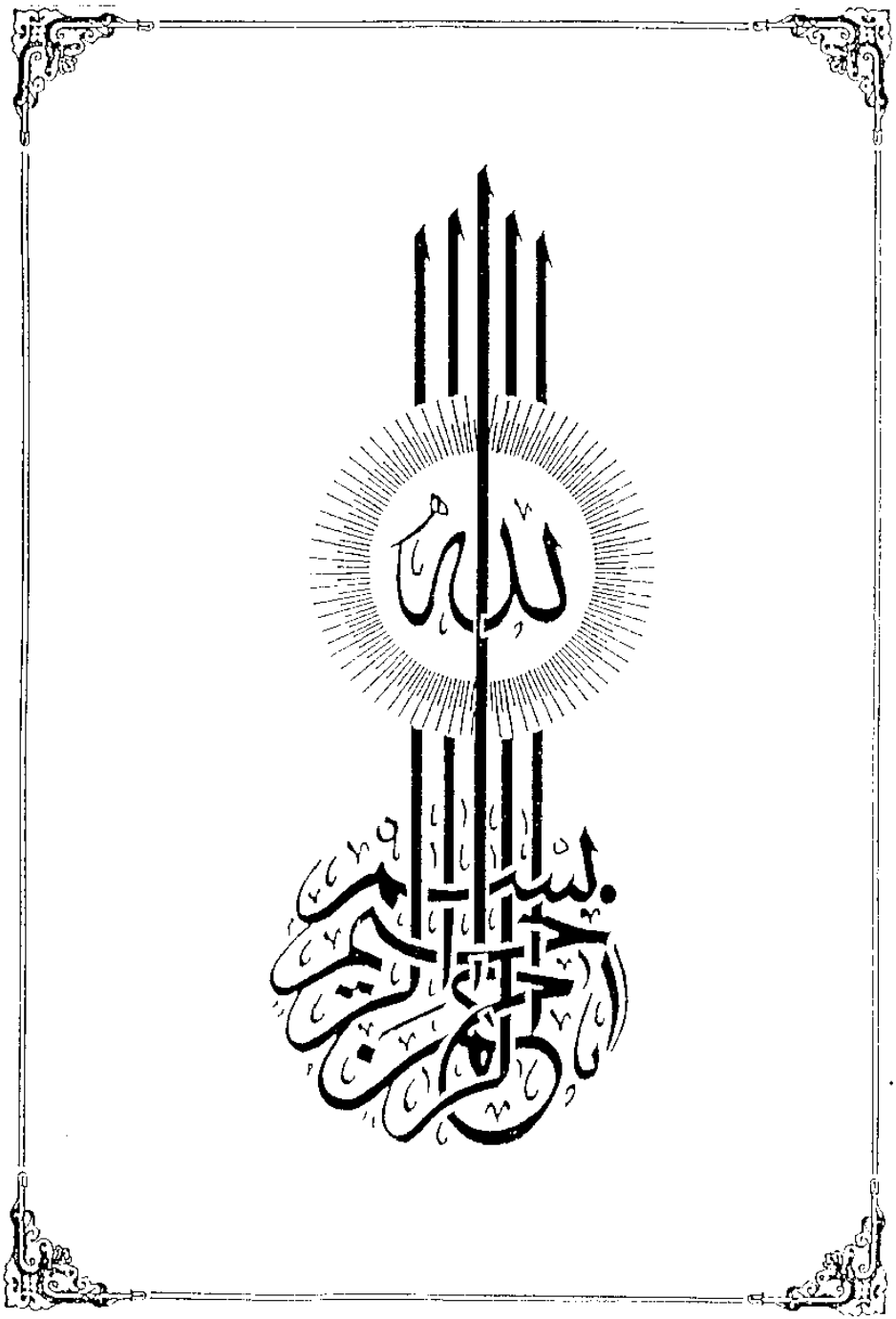

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# Introduction

# Introduction

## Historical Aspects of Thoracoscopy:

The use of endoscopy to investigate the less visible parts of the body can be traced as far back as medieval Arabia.

*Bozzini* in *1795* is often credited with the first endoscope. He used a candle as the light source to examine the rectum and uterus. Adequate distal illumination, however, was significant problem until *Nitze* in *1879* incorporated an overheated glowing piece of platinum at the tip of cystoscope ***(Schindler, 1937)***.

Widespread use of endoscopy, in general, followed application of the Edison light bulb to the cystoscope in 1883.

*Rosenheim* in *1906* used a miniature electric lamp for illumination and shortly afterward an improved rigid instrument called Bruening's electroscope was used ***(Bhoyrul et al., 1995)***.

Since the early years of modern thoracic surgery, thoracoscopy has played a role in the diagnosis and treatment of diseases of the chest.

Thoracoscopy is an important tool first introduced by **Jacobeus** in ***1910*** for the lysis of tuberculous adhesions. Since that time, many reports have described the use of thoracoscopy primarily as a diagnostic modality. Most of these reports described the use of standard rigid open endoscopes (bronchoscopes / mediastinoscopes) ***(Rodgers et al., 1981)***.

*Jacobeus*, in *1922*, reported 40 cases of lysis of pleural adhesions to promote artificial pneumothorax in patients with pulmonary tuberculosis. For the next 30 years, the thoracoscope was widely used for pneumonolysis in tuberculosis patients. After effective antibiotics for tuberculosis were developed, use of the thoracoscope waned considerably.

In *1973*, ***DeCamp and associates***, from the Ochsner Clinic, reviewed 126 patients with pleural effusions who had undergone thoracoscopy for diagnostic purposes.

From the time of ***Jacobeus***, who used the thoracoscope primarily as a therapeutic tool for patients with tuberculosis, until very recently, thoracoscopy was employed almost entirely as a diagnostic instrument ***(Kaiser, 1987)***.

Only a few reports in the eighties on the nineteenths described its use in some selected conditions as a therapeutic tool. ***Hutter et al. (1985)*** described its use in management of empyemea thoracis, ***Brainbridge et al. (1985)*** described its use in the management of esophageal perforation, and ***Torre et al. (1989)*** in therapy of spontaneous pneumothorax.

The advent of new endoscopic equipment, originally developed for abdominal procedures, promised to generate renewed interest in thoracoscopy for both diagnostic and therapeutic applications ***(Kessler, 1993)***.

The introduction of fiberoptic lighting in 1960, high-resolution optics by *Hopkins* in *1966*, and advances in video technology in 1986 have all combined to provide thoracic surgeons with an outstanding means of visualizing the thoracic cavity ***(Bhoyrul et al., 1995)***.

However, the application of video laparoscopic techniques to thoracic surgery was met with some skepticism. Yet, video-assisted thoracic surgery (VATS) is fast becoming an accepted modality.

Simultaneously, instruments have been developed to allow bimanual dissection and suturing under video endoscopic monitoring. Very recently, stapling devices, clip appliers, and combined suction-irrigation-cautery-dissection devices have been introduced, further expanding the potential of endoscopic surgery ***(Kessler, 1993)***.

Obviously, endoscopic surgery has gradually replaced the open methods in many surgical fields.

Despite the already wide experience with video-assisted techniques in laparoscopic surgery, video-assisted thoracic surgery only recently came to be developed ***(Coosemans et al., 1993)***.

Recent improvements in instrumentation have expended its utilization to the treatment of pneumothorax, pulmonary tumors, and other disorders ***(Byrne et al., 1990)***.

Pulmonary resection has become the largest application of video-assisted thoracic surgery (VATS) comprising over one-half of the cases of thoracoscopy in most series. Indications for VATS lung resection include pulmonary nodules, cancer, blebs, and bullous lung disease ***(Hazelrigg et al., 1996)***.

Thoracoscopy has been used in the management of selected patients with recurrent pneumothorax using fibrin glue or laser fulguration to seal off air leaks ***(Wakabayashi et al., 1990)***.

Thoracoscopy is now used as an adjunct to cervical mediastinoscopy, it promises to be a useful tool in the staging of lung cancer. It has a potential role in the staging of esophageal malignancies, and a prospective trial is underway. Finally, the