

EVALUATION OF VIDEO-ASSISTED THORACIC SURGERY IN PEDIATRICS

Akram Allam, Samir Keshk, Magdy Akel,* Ahmed Abdelaziz, Nora Mamdouh Mohamed Gamal Youssef

Department of Cardiothoracic Surgery, Department of Surgery,* Faculty of Medicine, Alexandria University

Introduction

Video-assisted thoracic surgery has been adopted in adults for many years, yet it’s application in pediatrics is still limited and infrequently reported in literature. In 2000, Rothenberg was the first to report thoracoscopic lobectomy in pediatrics. The use of VATS in children has been an area of interest among surgeons. With more experience gained and the availability of better thoracoscopic instruments, even the old absolute contraindications for VATS are now being revised. VATS allows direct examination of the thoracic cavity, for both diagnostic or therapeutic purposes, without the big conventional thoracotomy and thereby avoids extensive chest wall damage. On the other hand, conventional thoracotomy involves extensive muscle cutting and rib spreading, which leads to significant postoperative pain and deformities. Therefore, VATS is superior to thoracotomy in reducing musculoskeletal sequelae as scoliosis and muscle weakness, which is important in developing children and has a great impact on their quality of life.

Aim of the work

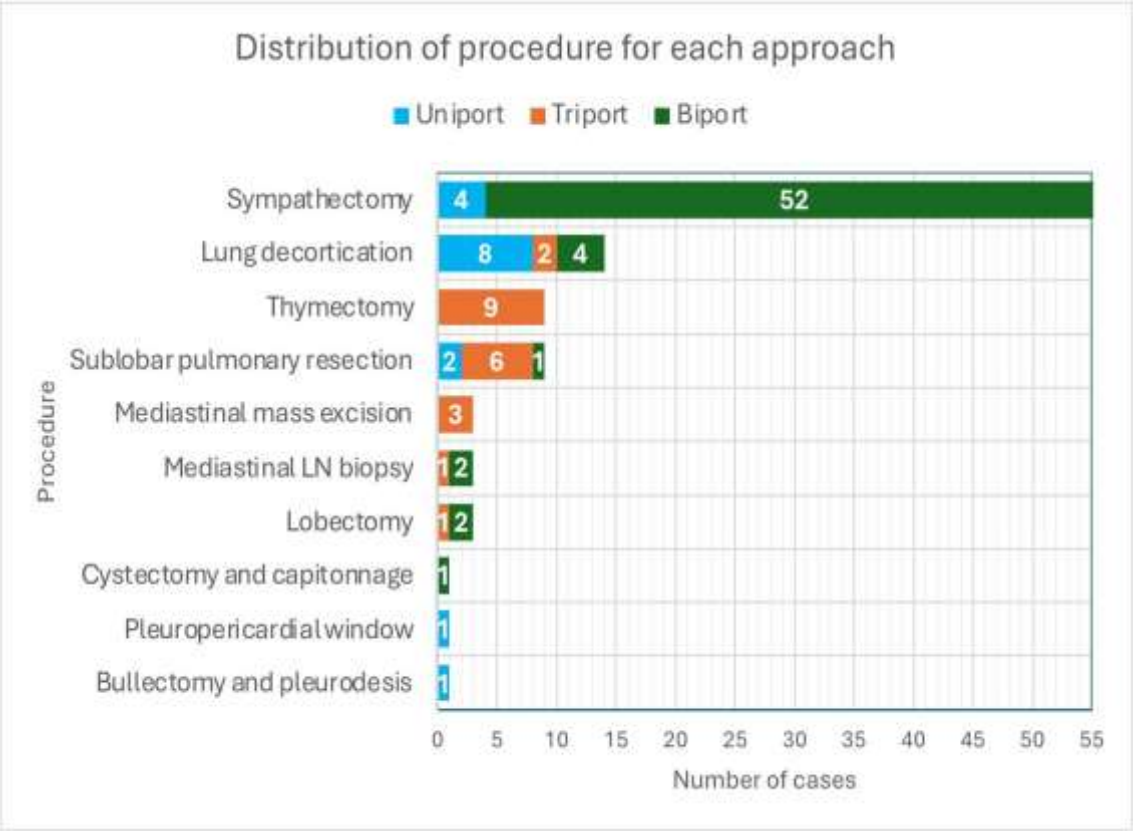
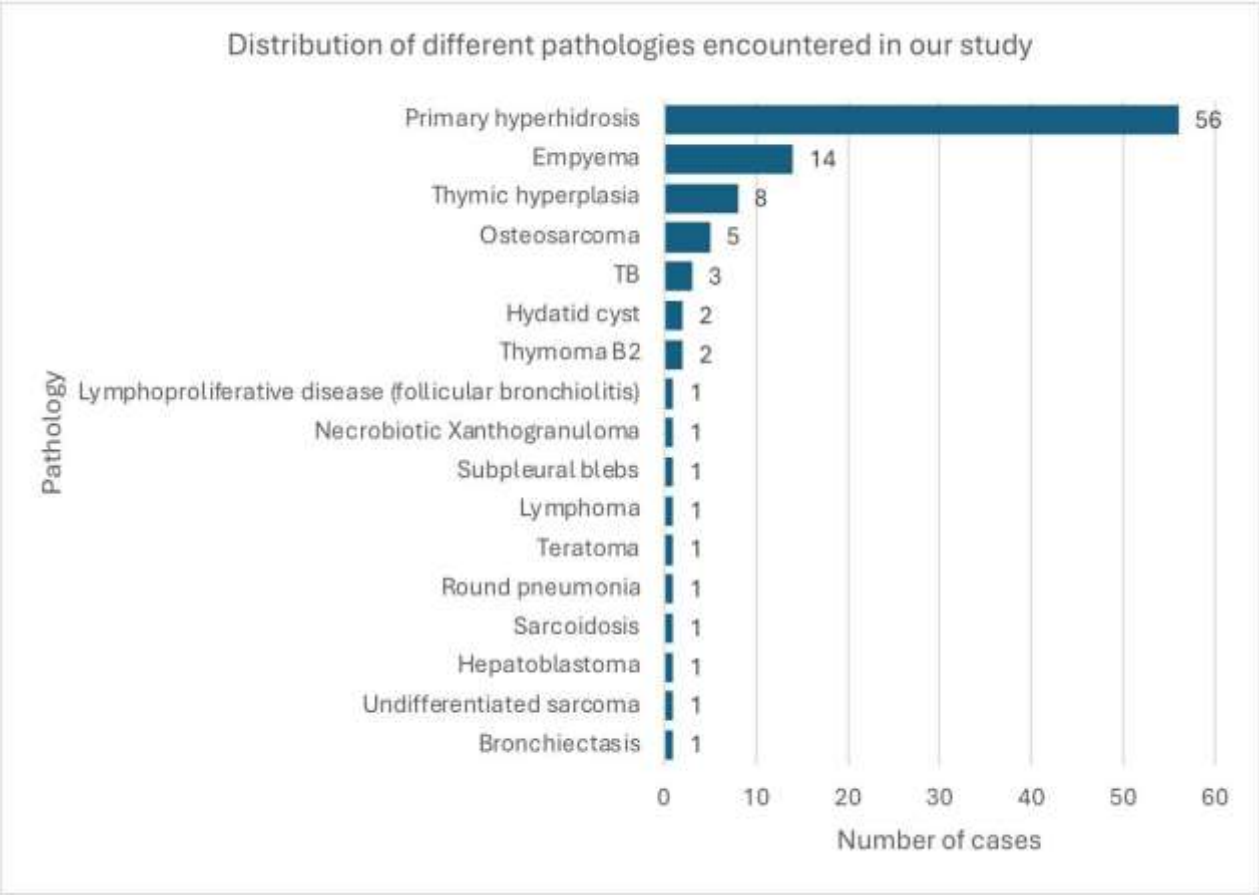
This study aimed to evaluate the efficiency, safety and feasibility of video-assisted thoracoscopic surgery in pediatrics.

Patients and Methods

In this prospective study all patients aging 18 years and younger who underwent VATS at the Cardiothoracic Surgery Department, Faculty of Medicine, Alexandria University from March 2024 to March 2025 were included. All procedures were done under general anaesthesia. To obtain a working space, intermittent apnea or low-pressure CO2 insufflation was used, or single lung ventilation was done by main stem bronchial intubation or double lumen endotracheal intubation. Patients were positioned in semi-fowler’s position during sympathectomy, semi-supine position during resection of anterior mediastinal lesions and lateral decubitus position for other pathologies. Postoperative complications were classified according to The Ottawa Thoracic Morbidity & Mortality System (TMM). Postoperative pain was evaluated by Modified Objective Pain Scale (MOPS) and Visual Analogue Scale (VAS). After discharge, patients were scheduled for follow-up at 1 week and 4 weeks post-operatively. Surgical scars were evaluated after complete healing using Stony Brook Scar Evaluation Scale (SBSES).

Results

During the study period, 100 patients were included, with female predominance (65%), and mean age of 13.15±4.85 years. The mean operative time was 49.65±34.29 minutes, mean length of hospital stay was 1.33±1.99 days, and mean duration of intercostal drain was 0.84±1.28 days. The most common indications for surgery were primary hyperhidrosis (56%), empyema (14%) and mediastinal masses (12%). The rate of conversion to open surgery was 8%. Fortunately, there wasn’t any mortality, and the complication rate was 14%. Complications ranged from grade I to grade IIIa and with a median of 1 according to TMM. The average VAS was 1.03±1.59, the average MOPS was 2.5±1.6, and the average SBSES was 4.47±0.89



Conclusion

Video-assisted thoracoscopic surgery is safe and feasible in pediatrics. It prevents undesired musculoskeletal deformities in growing children, has better cosmetic results, less blood loss, less post-operative pain, shorter hospital stay and faster recovery. Mastering the technique in adults allows faster and safer application in pediatrics. A competent team of thoracic surgeons and anaesthesiologists will ensure safe operations for pediatric patients