INPLASY PROTOCOL

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Conflicts of interest:
None declared.

Feasible of subxiphoid thoracoscopic approach in mediastinal surgery: a meta-analysis

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Review question / Objective: **Video-assisted thoracoscopic surgery (VATS) has been evolved from the original VATS with 3-4 ports to uniportal access for the past decades. Giving many advantages, VATS was widely used for thoracic surgery, which includes mediastinal surgery. Among types of different approaches for VATS, subxiphoid video-assisted thoracoscopic surgery (SVATS) shows several advantages according to previous research. The current meta-analysis aims to explore the role of SVATS in mediastinal surgery.**
Information sources: **We conducted relevant studies by searching Embase and PubMed databases (from the inception to Oct 1, 2021). The literature search was performed by two investigators (TH, HF) independently.**

INPLASY registration number: This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 08 March 2022 and was last updated on 08 March 2022 (registration number INPLASY202230031).

INTRODUCTION

Review question / Objective: **Video-assisted thoracoscopic surgery (VATS) has been evolved from the original VATS with 3-4 ports to uniportal access for the past decades. Giving many advantages, VATS was widely used for thoracic surgery, which includes mediastinal surgery. Among types of different approaches for VATS, subxiphoid video-assisted thoracoscopic surgery (SVATS) shows several advantages according to previous research. The current meta-analysis aims to explore the role of SVATS in mediastinal surgery.**

Condition being studied: **Video-assisted thoracoscopic surgery (VATS) is currently a common method in thoracic surgery which is widely used in the treatment of lung**

diseases, mediastinal tumors, esophageal cancer, and other chest diseases. Compared with traditional open thoracic surgery, VATS has the advantages of less trauma, less bleeding, less pain, and faster recovery. Uniportal video-assisted thoracoscopic surgery has been developed well since Rocco proposed this type of surgery firstly in 2004. According to the former research, Uniportal VATS can shorten the operation time, reduce intraoperative bleeding and surgical trauma, minify the surgical scars, and improve patient satisfaction. However, traditional uniportal VATS still needs to operate through the intercostal gap. Intraoperative instrument operations may compress, irritate or even damage the intercostal nerve in intercostal VATS, which results in postoperative pain. Thoracic drainage tube can also stimulate the intercostal nerve and cause postoperative pain. The occurrence of postoperative pain may lead to the poor effect of lung function exercise which affects postoperative lung recruitment, in turn affects the patient's postoperative recovery and quality of life. Under such a background, uniportal subxiphoid video-assisted thoracoscopic surgery has been proposed. Uniportal subxiphoid VATS doesn`t require to operate through the ribs, which avoids intercostal nerve damage. Moreover, bilateral thoracic operation through a single incision becomes feasible when uniportal subxiphoid VATS is performed, which can lead to the reduction of postoperative pain, shorten the operation time and reduce the surgical trauma. This meta-analysis aims to collect relevant clinical researches of uniportal subxiphoid video-assisted thoracoscopic thymectomy and summarize the advantages of uniportal subxiphoid VATS, thus new evidence-based medical evidence for the selection of the approach of video-assisted thoracoscopic surgery can be provided.

METHODS

Search strategy: (Subxiphoid OR Transsubxiphoid OR trans-subxiphoid) AND (Thymomas OR Thymus OR mediastinum tumor OR thymectomy.

Participant or population: Patients with mediastinal disease.

Intervention: Subxiphoid approach.

Comparator: Other approaches.

Study designs to be included: Cohort study or randomized controlled trials.

Eligibility criteria: We regarded studies as eligible for inclusion according to the following criteria: 1) Patients with mediastinal disease; 2) Subxiphoid approach as intervention group; 3) Control group including any other approaches; 4) Cohort study or randomized controlled trials.

Information sources: We conducted relevant studies by searching Embase and PubMed databases (from the inception to Oct 1, 2021). The literature search was performed by two investigators (TH, HF) independently.

Main outcome(s): We treated postoperative pain, intraoperative blood loss, operation time, chest tube duration, and hospital length of stay as primary outcomes. Secondary outcomes were the occurrences of transition to thoracotomy, postoperative pleural effusion, phrenic nerve palsy, and lung infection.

Quality assessment / Risk of bias analysis: The quality of each study was evaluated using the modified Newcastle-Ottawa quality scale, with a maximum of 9 points. The higher scores mean a lower risk of bias.

Strategy of data synthesis: All meta-analyses were performed by using random-effects models.

Subgroup analysis: Sensitivity analyses according to area and control group were performed.

Sensitivity analysis: Sensitivity analyses according to area and control group were performed.

Language: English.

Country(ies) involved: China.

Keywords: Subxiphoid, Mediastinal surgery, meta-analysis.

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