REVIEW ARTICLE

Tubeless VATS: A New Frontier in Minimally Invasive Thoracic Surgery

S M Tajdit Rahman1, Md. Morsedul Islam[2], Md. Resalat Chowdhury[3], Md. Rubaith Chowdhury[4]
A K M Razzaque[5], S M Tajdit Rahman[6]

Abstract:
Tubeless uniportal video-assisted thoracoscopic surgery (VATS) has brought a revolutionary change in the prevailing trend of thoracic surgery by achieving both goals of minimizing tissue injury and preserving function. It helps to establish enhanced recovery after surgery (ERAS) protocol in thoracic surgery by eliminating routine postoperative chest tube drainage and in selected cases avoiding endotracheal intubation which enhances postoperative recovery, reduces pain, facilitates early mobilization, and shortens hospital stay.

Introduction :
Tubeless uniportal VATS is usually a combination of performing VATS through a single port approach under non intubated spontaneous breathing anesthesia and omission of routine postoperative chest drainage.[1] Though it is not applicable in all the cases of thoracic surgery, there are some sectors where it has been established

Indications & Techniques :
Thoracic sympathectomy is one of the earliest and most established sector where tubeless uniportal VATS has been applied successfully. Shao et al performed 172 thoracic sympathectomy from March 2014 to December 2020 through tubeless uniportal VATS approach where intraoperative conversion to 3-port VATS followed by drainage tube insertion occurred in one (0.6%) patient due to extensive pleural adhesions and no patients required conversion to intubated anesthesia during surgery.[2] Pulmonary wedge resection or bullectomy for spontaneous pneumothorax is another scope where tubeless uniportal VATS is applicable. Igai et al. showed in a prospective study over 30 PSP patients from January 2021 and November 2021 that 26 patients out of 30, did not require any chest drain tube after surgery and mean postoperative hospitalization time was 1.2?±?0.4 days.[3] Excision of mediastinal tumor is an established field of tubeless uniportal VATS. Compared with traditional VATS, tubeless VATS for mediastinal tumor may shorten the anesthesia time, decrease postoperative pain and fasten postoperative recovery for carefully selected patients.[4] For treating selected patients with peripheral lung nodules, Yang et al. reported that tubeless uniportal thoracoscopic wedge resection is feasible and safe and may be a less invasive alternative.[5]

Now, the question is who are eligible for tubeless uniportal VATS? He et al. has settled sudden inclusion and exclusion criteria for patient selection. Inclusion criteria includes duration of operation no more than 2 hours, aged 16-60 years, ECOG physical performance score ?1 point, ASA grade ? II, Ejection Fraction >50% and FEV1% >50% of predicted value and normal functioning other vital organs, and operation has lesser chance of developing severe complications like major bleeding, respiratory obstruction, and

Authors 1. S M Tajdit Rahman, Registrar, Department of Thoracic Surgery, National Institute of Diseases of the Chest & Hospital, Dhaka, Bangladesh.2. Md. Morsedul Islam, Medical Officer, Department of Thoracic Surgery, National Institute of Diseases of the Chest & Hospital, Dhaka, Bangladesh. 3. Md. Resalat Chowdhury, Consultant, Thoracic Surgery, Bangladesh Specialised Hospital, Dhaka, Bangladesh. 4. Md. Rubaith Chowdhury, Assistant Professor, Department of Anesthesia & ICU, Shaheed Monsur Ali Medical College, Dhaka, Bangladesh.5. A K M Razzaque, Professor, Department of Thoracic Surgery, Green Life Hospital, Dhaka, Bangladesh. Corresponding author S M Tajdit Rahman Address: 27, Navana garden, Kallyanpur, Dhaka-1207, Bangladesh. Mobile: 8801971070707 Mail: tanims@ymail.com