Initial Single-Center Experience on Non-Intubated Video Assisted Thoracoscopic Surgery at a Tertiary Hospital in the Philippines

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I. Introduction

Non-Intubated Video Assisted Thoracoscopic Surgery (NIVATS) is an emerging treatment modality in the field of Thoracic and Cardiovascular Surgery. NIVATS can be briefly defined as a thoracic surgical procedure performed on a non-intubated, spontaneously breathing patient (with or without sedation) in combination with locoregional anesthesia. Historically, this procedure is done exclusively in high-risk patients who are not good candidates for endotracheal intubation due to the associated hemodynamic and cardiorespiratory complications. However, in the advent of technological development and rise of Minimally Invasive Surgery, NIVATS was re-visited for its latent potential in ambulatory care. Our institution is one of the Tertiary Hospitals in Metro Manila that is capable of the said procedure due to the presence of diverse Sub-specialties (namely Thoracic Surgery and Locoregional Anesthesia). Hence, the goal of this study is to describe the first cases of NIVATS in our institution to provide baseline data regarding the technique. This data will then be used to assess areas of improvement and address technical shortcomings. This is to ultimately provide standardized surgical care that is applicable in the local setting in terms of technique and cost-efficiency.

II. Methods

The study is a retrospective case series of patients who underwent Non-Intubated Video Assisted Thoracoscopic Surgery at Jose R Reyes Memorial Medical Center between January 1, 2024 to December 31, 2024. The study aims to describe the patient characteristics of the first cases of NIVATS and their respective post-operative outcomes. The study also illustrates the surgical and anesthetic technique of the first cases of NIVATS done in our institution.

III. Results

A total of 8 patients were included in this study. The mean age of patients is 46 (± 13.7) where 6 (75%) are males. Majority of the patients are classified as high surgical risk 4/8 (50%) ASA III and 3/8 (37.5%) ASA IV.

The indications for performing VATS are empyema thoracis 5/8 (62.5%), loculated hemothorax 2 (25%) and pneumothorax for apical bleb 1 (12.5%).

Post-operative outcomes:

The mean follow up is 90 (± 125) days. No post-operative pulmonary complications (PPC) and mortality occurred. There was no conversion to intubation in all the cases performed.

The mean blood loss is 263 ml (± 109) with 4 (50%) cases requiring blood transfusion perioperatively.

The mean post-operative pain (visual analog scale) is 2.8/10 (± 2) on the first 24 hours post operatively.

Mean global operative time (duration at operating suite) is 287 (± 68) minutes. The mean actual operative time (skin incision to skin closure) is 103 (+-40) minutes while the mean anesthesia time (induction of anesthesia) is 74 (± 20) minutes.

Mean length of total hospitalization stay is 33 (±- 10) days while the mean post operative hospitalization stay is 10 (±4).

IV. Conclusions

Non intubated video assisted thoracoscopic surgery is a feasible and safe procedure that can be performed even in high surgical risk patients. The possibility of performing more complex thoracic surgical procedures can also be explored upon refinement of the surgical and anesthetic in our institution.