SURGERY

TUBELESS THORACIC SURGERY? YES, BECAUSE THE FUTURE STARTS TODAY

Dr. Javier Gallego

THE main advantage of non-intubated surgery is to avoid the perioperative morbidity derived from the deleterious effect of general anaesthesia and one-lung ventilation, in addition to the beneficial effects of spontaneous ventilation in a non-intubated patient.

Inclusion criteria for a non-intubated uniportal procedure includes all selected patients for whom the avoidance of morbidity of conventional thoracotomy and the risk of an intubated general anaesthesia could be reduced.

The choice of a single incision technique in an awake or non-intubated patient could minimise even more the invasiveness of the surgery and anaesthesia. We call these uniportal procedures "Tubeless VATS": single 3cm incision, no endotracheal tube, no urinary catheter, no central vein and no epidural.

We consider it very important in high-risk patients for general intubated anaesthesia such as elderly patients or those with poor pulmonary function. It is advisable to perform a careful selection of the patients, especially during the learning curve. The contraindications for awake major resections are patients with an expected difficult airway management, obesity (body mass index>30), dense and extensive pleural adhesions, hemodynamically unstable patients, ASA>II and big tumours (>6 cm).

Thanks to the avoidance of intubation, mechanical ventilation and muscle relaxants, the anaesthetic side effects are minimal allowing most of the patients to be included in a fast protocol avoiding the stay in an intensive care unit.

Moreover, the perioperative surgical stress response could be attenuated in non-intubated patients undergoing uniportal VATS as a result of the reduced postoperative stress hormones and pro-inflammatory mediators related to mechanical ventilation.

Oxygen (6-9 l/min) is supplied via nasal cannula or facial mask. The pharmacological management is based on a target-controlled infusion of remifentanyl and propofol, with a premedication of midazolam (0.15-0.25 mg/kg) and atropine (0.01 mg/kg) 15 minutes before anaesthesia, adjusting real-time rate of infusion with the aggressiveness of each period during the surgery.

The use of an intraoperative vagus blockade is recommended to suppress coughing that could be troublesome when performing lung traction and hilar manipulation during dissection.

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During an uniportal approach in a non-intubated patient, it is recommended to perform a paravertebral blockade or an intercostal infiltration under thoracoscopic view. The importance of avoiding epidural thoracic blockade (avoiding opioids) will result in faster recovery and return to daily activities.

The non-intubated VATS major pulmonary resections must only be performed by experienced anaesthesiologists and uniportal thoracoscopic surgeons (preferably skilled and experienced with complex or advanced cases as well as bleeding control through VATS).

In some unpredictable difficult cases, intraoperative conversion to general anaesthesia is sometimes necessary. The anaesthesiologist must be skilled in bronchoscopic intubation, placing a double-lumen tube or an endobronchial blocker in a lateral decubitus position.

Tubeless thoracic surgery is currently evolving, challenging former exclusion criteria and expanding indications to major lung resections or even tracheal and carinal resections to provide better intraoperative status and promote minimal need for recovery.

Tubeless thoracic surgery is not the future. It is what we already do today. Here and now.

|| features@algarveresident.com
Dr. Javier Gallego is Cardiothoracic Surgeon at the Hospital Particular do Algarve, Alvor and Gambelas