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Awake anesthesia for major thoracic surgical procedures: An observational study

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Objective: Major thoracic surgical procedures are rarely performed under awake anaesthesia. The purpose of this study is to review the experience of a tertiary center in major thoracic surgical procedures done under awake anaesthesia.

Methods: This single center, single operator, retrospective review of cases of thoracic surgery was done under awake anaesthesia, which included all patients operated on from September 2002 to September 2006. Patients were pre-medicated with intravenous fentanyl 50 μg and midazolam 3 mg. Thoracic epidural anaesthesia was done either between T1-T3 and T4-T6 depending on the type of procedure. The block level was verified using warm-cold discrimination. In addition, stellate ganglion block was performed in some patients to achieve cough control. The following data were documented: patients' demographics, the type and approach of procedure, operative time, intra-operative complications, conversion to general anaesthesia, mortality, the need for intensive care unit (ICU) admission and postoperative hospital length of stay.

Results: A total of 79 cases were performed over the study period. The mean age was 37±18 years (59% male). Twenty-five patients (32%) underwent thymectomy, 11 patients (13%) lung resection and 8 patients (11%) sympathectomy. The most common approach was thoracoscopy in 61 patients (77%), followed by thoracotomy in 11 patients (14%) and median sternotomy in 3 patients (4%). The median postoperative hospital stay was 1.5 days, with 33% of cases discharged on the same day of operation (day surgery). Only five patients (6%) required ICU admission; three of these patients in 2002 did not need ICU, but epidural policy at that time mandated ICU admission-only 2/79 (2.5% required ICU). One patient died as a result of his underlying metastatic hepatocellular carcinoma 9 days postoperatively. Another patient was converted early to general anaesthesia prior to pneumonectomy after discovery of left upper lobe involvement and he died 3 months later. There was no anaesthesia related mortality.

Conclusion: We conclude that major thoracic procedure can be safely performed under awake anaesthesia. The technique avoids general anaesthesia and endotracheal intubation, reduces postoperative hospital stay and minimizes intensive care unit admission. This study strongly suggests awake anaesthesia can improve outcomes and reduce cost. A proper multi-center trial to further evaluate this technique is needed.

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