Awake Pericardial Window In A Critically Ill Patient With A Mediastinal Mass : A Sedation Technique.

Shairil Rahayu Ruslan, MBBS, Manaest[1], Lucy Chan, MBBS, FFARACS, FANZCA[1], Shahrul Amry Hashim, B.Med.Sc, M.B.Ch.B, MRCS, FRCS (C-Th)[2], Mohammad Hafizshah Sybil Shah, M.D. [1], Amir Adham Ahmad, MBBS, DR ORTHO[3]

[1]Department of Anaesthesiology, Faculty of Medicine, University of Malaya
[2]Department of Surgery, Faculty of Medicine, University of Malaya
[3]Department of Orthopaedics, International Medical University

Introduction : Mediastinal mass when presenting symptomatically is a life-threatening emergency that warrants intervention like endotracheal intubation and mechanical ventilation. However, the nature of the mediastinal mass which compresses the great vessels as well as the airways would mean risk of total cardiorespiratory collapse. Even if death is avoided in such cases, most patients woud end up unable to be weaned from ventilation and mortality would be very high.

Case presentation : We report a case of an emergency pericardial window performed in an awake critically ill patient under regional anaesthesia and sedation. This patient who was ASA IV had poorly differentiated adenocarcinoma as a symptomatic mediastinal mass complicated with a pericardial effusion. A pericardial window was planned following failed pericardiocentesis under local anaesthesia. In view of his advanced disease, we performed an intercostal nerve block and provided sedation using dexmedetomidine and ketamine. The aim was to avoid endotracheal intubation and general anaesthesia which brings the risk of total cardiorespiratory collapse, as well as the potential of a CICV scenario. The block was by landmark technique. Usually this is done with ultrasound guidance but at the time, the ultrasound machine was in use in another operating theatre and we were pressed for time. The patient was in a sitting up position and was able to cooperate. We identified the T5 intercostal space as the level of the planned surgery and also marked the 4 intercostal spaces needed for the block (2 intercostal spaces above and 2 spaces below to T5). After completion of the block, Dexmedetomidine was administered at 0.6mcg/kg/hr and intravenous Ketamine was given in 10mg aliquots. After the surgical site was insensate and asepsis achieved, a thoracotomy incision was made at the 5th intercostal space and the thoracic cavity entered. A window was created into the left pleural cavity and a size 28Fr chest tube was inserted. Throughout this procedure, the patient's haemodynamics remained stable and he was not in pain or in distress. Target RASS (Richmond Agitation-Sedation Score) of 0 to -1 was achieved and the patient also maintained spontaneous respirations and saturations kept above 92% at all times. By the end of the surgery, the highest Dexmedetomidine dose was 0.8mcg/kg/hr and total ketamine bolus was 70mg.

Conclusion : Our choice of intercostal nerve block for a pericardial window supplemented with infusion of dexmedetomidine and ketamine boluses proved to be a good decision as the patient was critically ill at the time with all the signs indicating that he would be a poor candidate for tracheal intubation and general anaesthesia. Within our setting with basic skills and the drugs that are easily available in the operating theatre, we were able to avoid the high anaesthetic risks involved in a patient with a mediastinal mass going for a pericardial window, thus reducing morbidity and avoiding mortality.