Anesthetic management of a case of achalasia cardia with mega-esophagus causing intraoperative cardio-respiratory compromise

Sir,

Achalasia along with megaesophagus may lead to airway compression leading to the respiratory compromise.[1,2] However, cardiovascular compromise has not been reported previously. We present a patient who underwent thoracoscopic assisted esophagectomy with gastric pull-up for achalasia cardia with megaesophagus which resulted in compression of the left bronchus and the great vessels during its separation from the surrounding structures.

A 46-year-old male was scheduled for thoracoscopic assisted esophagectomy with gastric pull-up. Pulmonary function tests reported moderate restriction and mild airway obstruction. Chest radiograph revealed a markedly dilated esophagus with small air-fluid levels in the mediastinal region with bilateral minimal pleural effusion [Figure 1]. Barium swallow skiagram showed a grossly dilated esophagus with residual food suggestive of achalasia cardia and dilated esophagus [Figure 2]. Computed tomography of thorax revealed grossly dilated lower third esophagus [Figure 3]. Standard monitoring and general anesthesia with left sided double lumen tube (DLT), and thoracic epidural anesthesia was administered. The patient was placed in the left lateral position, and right thoracoscopy was started. As the surgeons started separating the esophagus from the surrounding structures, hemodynamic instability, and arrhythmias occurred coincident with the motion of the thoracoscope. Later, it was noticed that the bellows were gradually collapsing and capnogram showed a decreased
unusual complication wherein the airway and hemodynamics were compromised intraoperatively due to compression by a megaesophagus. In our case, the intraoperative obstruction occurred even though the esophagus has been emptied via an orogastric tube. This was due to large mass of esophagus pressing over the trachea when it was surgically released. The megaesophagus was initially adherent to the right/upper pleura. As the surgeons proceeded with its separation from the surrounding structures, it fell onto the left bronchus and great vessels due to the effect of gravity. This was initially appreciated during the course of dissection as transient intermittent hypotension with even the smallest and finest movement of a slender instrument like the thoracoscope. Later, hypotension became more persistent along with inadequate ventilation of the left lung. The cause for such physiological derangements was sought and efforts such as infusion of fluids, vasopressor administration, and repeated adjustment of DLT along with measures to rule out any leaks in the circuit between the patient and the anesthesia work-station proved to be inadequate.

This raised a suspicion that the likely reason for the cardiorespiratory instability was the huge and heavy megaesophagus causing heart and lung compression in the left lateral position. This was confirmed when the hemodynamics improved on the removal of the mass and making the patient supine. We thus conclude that with vigilance and timely management, we could avoid hypoxic injury, fatal cardiovascular events, and prolonged intensive care unit stay. Also, it is of critical importance that the surgeon and the anesthesiologist communicate with each other and work as a team starting preoperatively and continuing into the intraoperative period.

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There are no conflicts of interest.

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