Challenges of Difficult Airway in Treated Cancer Patient for High-risk Coronary Artery Bypass Graft Surgery

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ABSTRACT

Aims and objectives: To highlight the need to formulate a difficult airway pathway for post-cancer treated patients posted for high-risk cardiac surgery. Airway protection is mandatory for surgery. Cancer patients, especially oral, are difficult airway candidates as are cardiac patients. Cancer patients pose anatomical challenges, while cardiac patients pose physiological and/or anatomical challenges. However, when a cancer-treated patient comes for cardiac surgery with compromised cardiac status, the risk and complication probability increases. With cardiac disease and cancer being interrelated and incidence rising with newer treatment modalities, cases are varied requiring impromptu innovation. We present a case of post-surgery, chemo, and radiotherapy oral cancer posted for coronary artery bypass graft (CABG) with left main disease and low ejection fraction.

Keywords: CABG, Cancer, Difficult airway, Fiberoptic intubation.

Research and Innovation in Anesthesia (2021): 10.5005/jp-journals-10049-0102

Introduction

Cardiac disease and cancer represent two major causes of morbidity and mortality. Oral cancer is the most common cancer among males in India related to tobacco and gutka chewing,¹ which also contribute to cardiac disease. With advances in treatment modalities, patients come for surgery at various stages of either disease and treatment process, posing challenges of disease and drugs to the anesthesiologist. The difficult airway is anticipated in cancer patients due to altered anatomy, surgery, radiation fibrosis, and physiological constraints in cardiac surgery patients. Difficult laryngoscopy exerts some hemodynamic responses which can be disastrous to a compromised heart especially in left main disease, its equivalent, low EF.² We present a case of oral cancer treated with surgery followed by chemotherapy and radiotherapy for coronary artery bypass graft (CABG) with left main disease and low ejection fraction.

Case Description

A 55-year-old man was admitted with angina, ECG showing antero-inferior MI. He was shifted to the cath lab on inotropes for angiography, which revealed LM-90%, LAD-70%, D1-90%, LCx-70%, and proximal RCA-70%. Echo showed global hypokinesia with grade II diastolic dysfunction, EF-32%. Advised CABG.

He was short-statured, moderately built with a history of HTN for 2 years. He was operated on for Ca buccal mucosa followed by chemotherapy and radiotherapy. The last cycle finished 6 months ago. He complained of DOE grade III and easy fatigability. He had off and on cough, no fever, no orthopnea. O/E restricted mouth opening with less than a finger interincisor gap. Tongue protrusion was not possible. Hence, awake fiberoptic intubation was planned. All pre-op investigations were done (Fig. 1).

On the day of surgery, 16-G IV cannula, right IJV, and right radial artery cannulated under local anesthesia. Difficult airway cart kept ready with consent for tracheostomy. Patient sedated with midazolam-fentanyl and nasal intubation attempted using 7.0 cuffed endotracheal tube with heart rate-68/minute, BP-110/68 mm Hg, SpO₂-96%, and nikoran infusion, after preparing nasal and oral cavity with a local anesthetic. However, on approaching the cords when sprayed, coughing raised HR-110/minute and BP-160/110 mm Hg, SpO₂-96%, stabilized with retraction of scope and fentanyl, propofol, and NTG. Procedure reattempted with success confirmed

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How to cite this article: Kaiche RK, Kaiche RA. Challenges of Difficult Airway in Treated Cancer Patient for High-risk Coronary Artery Bypass Graft Surgery. Res Inno in Anesth 2021;6(1):17–18.

Source of support: Nil

Conflict of interest: None

Fig. 1: Restricted mouth opening

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He was closely observed for any signs of respiratory distress. The patient was upright with a good muscle tone and cough reflex. He was closely observed for any signs of respiratory distress. After 48 hours in ICU, shifted to the ward and discharged on day 7 with physiotherapy guidance.

**Discussion**

Difficult airway, commonly encountered in patients for cardiac surgery, can be anatomical or physiological. It is imperative to consider all cardiac patients as potential Difficult airway since low cardiac output syndromes and acute heart failure ensue abruptly. The standard hemodynamic response to manipulation of the cardiovascular system produces a diffuse autonomic response that releases sympathetic fibers of cervical plexus getting stimulated. In addition, the spinal cord produces a diffuse autonomic response that releases sympathetic fibers of cervical plexus getting stimulated. The heart rate increases and the cardiac output syndromes and acute heart failure ensue abruptly. The heart rate increases and the cardiac output syndromes and acute heart failure ensue abruptly. The heart rate increases and the cardiac output syndromes and acute heart failure ensue abruptly. The heart rate increases and the cardiac output syndromes and acute heart failure ensue abruptly.

**Extubation**

Extubation was planned after confirming hemodynamic stability, decreasing hourly drain output, urine output >1 mL/kg, alert with respiratory rate <20/minute, tidal volume >400 mL, and SpO2 >95. The patient was upright with a good muscle tone and cough reflex. He was closely observed for any signs of respiratory distress. After 48 hours in ICU, shifted to the ward and discharged on day 7 with physiotherapy guidance.

**Extrusion**

Extrusion was planned after confirming hemodynamic stability, decreasing hourly drain output, urine output >1 mL/kg, alert with respiratory rate <20/minute, tidal volume >400 mL, and SpO2 >95. The patient was upright with a good muscle tone and cough reflex. He was closely observed for any signs of respiratory distress. After 48 hours in ICU, shifted to the ward and discharged on day 7 with physiotherapy guidance.

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