

## Complete recovery after cardiopulmonary resuscitation in the lateral decubitus position: A report of two cases

Sir,

Successful resuscitation from cardiac arrests under anesthesia in noncardiac cases has been reported but challenge multiplies when the position of patient is any other than supine. We present two cases of successful cardiopulmonary resuscitation in lateral position.

### CASE 1

A 55-year-old male patient was posted for right radical nephrectomy under general anesthesia (GA) in left lateral position. The patient was accepted in American Society of Anesthesiology (ASA) grading III due to un-optimized diabetes mellitus and ongoing urosepsis. Intraoperatively, the patient developed pulseless ventricular tachycardia. CPR was commenced immediately in lateral position with two rescuers for cardiac compression, following American Heart Association guidelines (2010), continued for 7 min. A 200J DC shock was administered and chest compressions continued. Adrenaline 1 mg intravenous (IV) was administered. Return of spontaneous circulation (ROSC) was witnessed after two cycles of chest compressions. Surgery was completed uneventfully.

### CASE 2

A 47-year-old lady was posted for excision of a recurrent fourth ventricle ependymoma under GA in right lateral decubitus position. The patient was accepted in ASA II. Intraoperatively, during surgical decompression, patient developed ventricular fibrillation. Immediately CPR was initiated in the lateral position with two rescuers and 200J DC Shock delivered. The rhythm turned pulseless ventricular tachycardia. Adrenaline 1 mg IV was administered; second, 200 J DC shock was administered. ROSC was witnessed after CPR for 2 min. Surgery was completed uneventfully.

Cardiac arrest under anesthesia is a dreaded complication, and the incidence varies from 0.01% to 0.34%.<sup>[1]</sup> The challenge arises when the positioning of the patient is other than supine. Successful resuscitation in prone position<sup>[2]</sup> is documented but rarely described in literature in lateral position.<sup>[3,4]</sup>

Cardiac event in first case was probably due to ongoing urosepsis and significant intra-operative bleeding. Perioperative arrhythmias due to brainstem handling during surgical manipulation in posterior fossa surgery<sup>[5]</sup> are a known complication in the second case. The patients could not be turned supine owing to the site of incision and head and thorax fixing device. We instituted early, effective cardiac compressions with two rescuers, one person delivering chest compressions and other providing mechanical back support to allow uniform distribution of the compressive force [Figure 1]. Due to paucity of space, defibrillator paddles were placed at upper precordium and in left mid axillary line (recommended site is cardiac apex and right infraclavicular region). Standard parameters to assess the efficacy of CPR such as arterial blood pressure waveform and capnograph<sup>[1]</sup> were used. Both patients recovered completely with no neurological deficit and were extubated after few hours of ventilation.

The clinical situations may not allow optimal positioning in certain situations. We conclude that high-quality CPR should be initiated irrespective of the initial positioning to attain early ROSC. Precious time should not be wasted, and emphasis should be on turning patients supine at the earliest when feasible. The challenges are lack of validated guidelines on CPR in lateral position, difficulty in administering chest compression and placement of defibrillator paddles owing to thorax fixation devices. There is the role of simulation-based formulation of guidelines.

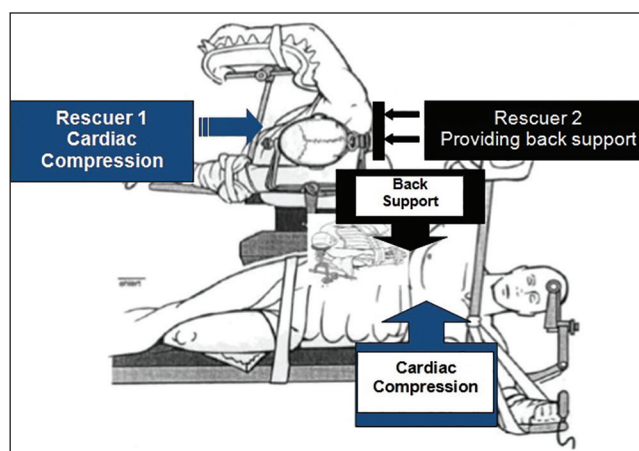


Figure 1: Schematic diagram of position of the patient and chest compression

**BHATNAGAR V, JINJIL K, RAJ P**

Department of Anesthesiology and Critical Care,  
INHS Asvini, Colaba, Mumbai,  
Maharashtra, India

**Address for correspondence:**

Dr. Vidhu Bhatnagar,  
Department of Anesthesia/Operation Theatre,  
INHS Asvini, Near RC Church, Colaba, Mumbai - 400 005, Maha-  
rashtra, India.  
E-mail: vizardvids@yahoo.co.in


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