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BACKGROUND: Cardiac arrest in operating room (OR) has a different spectrum of causes, almost always witnessed and precipitating causes are often known [1]. An appropriate evaluation and management of these causes require modification of traditional cardiac arrest algorithm.

CASE PRESENTATION: A 54-year-old Female underwent laparotomic surgery for ovarian malignancy spread in the abdominal cavity. After induction of anesthesia, two large cannulas in peripheral veins, a central venous access in the right internal jugular vein under ultrasound guidance and a 20-gauge arterial line in the radial artery were inserted. A continuous arterial waveform analysis was performed with EV1000 (Edwards® Lifescience) guiding clinicians in fluid and vasopressors infusions.

INTRAOPERATIVE EVENTS:

Following the hepatic and right diaphragmatic phase.....

LARGE BLEEDING WITH HYPOTENSION UNRESPONSIVE TO CRISTALLOIDS, COLLOIDS AND INCREASE OF VASOPRESSOR



RAPID ALERT FOR ANESTHESIOLOGISTS' STAFF FROM OTHERS OR



FAST DIVISION OF TASKS

LEADERSHIP: SENIOR ANESTHESIOLOGIST

COMMUNICATION WITH BLOOD BANK: 1 ANESTHESIOLOGIST

DRUGS PREPARATION AND ADMINISTRATION : 2 RESIDENTS

And when the Ventricular Fibrillation comes...

CPR DURING CARDIAC ARREST: SENIOR ANESTHESIOLOGIST

TREATMENT: After cardiac arrest the algorithm was immediately applied according to the 2015 ERC guidelines and after a 200J shock followed by 2 minutes of CPR, ROSC was obtained. In relation to auscultatory evidence of thoracic asymmetry at right hemithorax, a 14 G cannula needle at the level of the second intercostal space was urgently positioned with subsequent release of blood and air and direct communication with surgeons led to the placement of a thoracic drainage that ensured the recovery of an hemodynamic stability, in adjunction to hepatic packaging. At the end of a 13 hours surgery, infusions of 32 units of CRBC, 3 liters (L) of FFP, 15 L of crystalloids, 3 L colloids, the patient was transferred to an intensive care unit (ICU) for post-operative monitoring. She gradually regained an optimal hemodynamic state, excluding renal function so continuous renal replacement therapy was started. No signs of poly-transfusion acute respiratory failure were found. 5 days later the patient returned to OR to complete hepatic depackaging. After extubation started a respiratory support therapy with high humidified and heated flows.

The patient 8 days after admission had a recovery of an optimal state of consciousness and come back to gynecological ward where she continued dialysis until normal diuresis was restored and 26 days after surgery she was discharged from the hospital.



DISCUSSION: We speculate that the cause of cardiopulmonary arrest was the combination of the hypovolemic state and hypertensive hemothorax. Successful CPR and crisis management was performed thank to an effective use of non technical skills, as 2015 ERC guidelines recommend.

CONCLUSION: In our experience, according to literature, successful management of cardiac arrest during surgery requires not only technical skills but also an institutional safety culture embedded in everyday practice through education, training and multidisciplinary cooperation [2].

References

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2. Krage R, Zwaan L, Tjon Soei Len L et al Relationship between non-technical skills and technical performance during cardiopulmonary resuscitation: does stress have an influence? Emerg Med J. 2017 Nov;34(11):728-733. doi: 10.1136/emmermed-2016-205754. Epub 2017 Aug 26.