Available online at www.jsan.org.np

Journal of Society of Anesthesiologists of Nepal

Letter to the editor

Improvised perioperative techniques to meet the challenges of microvascular free flap surgery

Soumi Pathak, Itee Chowdhury, Ajay Kumar Bhargava

Rajiv Gandhi Cancer Institute and Research Centre, Sector 5, Rohini, Delhi 110085, India

Dear Editor,

Deformities of the head and neck region after radical oncosurgery can have devastating effects on the appearance of the patient with significant impact on patient's quality of life. Reconstruction of such defects continues to be an extremely demanding challenge for plastic surgeons who aim to restore form and function with minimal surgical morbidity.

The purpose of this communications is to highlight the various interventions and the protocols that are adopted to decrease the free flap failure rate.

All patients are thoroughly assessed and investigated and their co-morbidities are optimised prior to anaesthesia. Anaesthesia is induced with standard technique. In cases of difficult airway awake fiberoptic intubations is done under the local block. In addition to standard monitoring, Pleth Variability Index (PVI®) , Perfusion Index (PI) ,continuous Haemoglobin (SpHb®) using Radical -7 Masimo Rainbow Pulse CO-Oximetry, and Central and peripheral temperature are also monitored. Infusions of propofol and atracurium are used for maintenance of anaesthesia under BIS guidance and nitrous oxide is avoided. Low flow ventilation is used to achieve normocapnia, and hyperoxia is avoided. All measures are taken to maintain normothermia.

During the dissection stages of surgery, controlled hypotension improves the visualisation of the surgical field and also reduces blood loss. During harvesting and anastomosis of the flap, mean arterial blood pressure is maintained above 65 mm of Hg to ensure an adequate perfusion pressure through the graft tissue bed. Two thousand five hundred units of heparin is given intravenously before the clamping of the flap vessels. The surgeons use topical vasodilators (papaverine, lidocaine) to reduce flap vessel spasm.

Fluid therapy is an independent risk factor for flap thrombosis and failure. In our patients, PVI was used as a guide for optimisation of fluid therapy. Initially, 500ml of lactate free crystalloid is given over 30 mins which is followed by 2ml/kg/hr infusion and 100-200ml of colloid is given for PVI > 13%. Colloid boluses are also given for blood loss maintaining a haematocrit of 25-30%. Aim of the fluid therapy is to maintain a urine output of 0.5ml/

How to cite this article: Pathak S, Choudhury I, Bhargava AK. Improvised perioperative techniques to meet the challenges of microvascular free flap surgery. Journal of Society of Anesthesiologists of Nepal (JSAN) 2016;3(2):99-100. http://dx.doi.org/10.3126/jsan.v3i2.15626

ARTICLE INFO

Article History

Received 23.07.2016

Accepted 16.08.2016

Published 17.09.2016

Corresponding Author: Soumi Pathak, MD

http://orcid.org/0000-0003-1987-6670 *, Fellow in Onco-anesthesia, Department of Anesthesia*

Rajiv Gandhi Cancer Institute and Research Centre, Sector 5, Rohini, Delhi 110085, India

Email: pathaksoumi@gmail.com

hr-1ml/hr,PVI of <13% and MAP >65 mm of Hg. Thus fluid overload which is the main cause of flap oedema is prevented. Arterial blood gas analysis is done to assess the lactate levels and oxygenation. Thromboelastogram is used to assess the viscoelastic property of the blood and for initiation of anticoagulant therapy.

Diuretics, beta blockers and vasoactive drugs are avoided. At extubation, our aim is to have an awake and cooperative patient, and avoid large pressure variations associated with cough and agitation and therefore optimal analgesia is ensured. Thereafter, the patients are shifted to ICU. Frequent evaluation is done for flap viability. Most of our patients who needed re-explorations are taken up within 6-8 hours of surgery. The patients are discharged on low dose aspirin 75mg. Thus with the help of advanced monitoring, PVI guided fluid therapy and TEG directed pro and anticoagulant therapy; we are able to decrease the flap failure rates in our hospital. Further studies are necessary to establish our observations.