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MICROVASCULAR FREE TISSUE TRANSFER UNDER REGIONAL ANESTHESIA DURING COVID PANDEMIC: CASE REPORT

Plastic Surgery

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ABSTRACT

Coronavirus disease was declared a pandemic by WHO on 11 March 2020 [1]. In the present scenario, increasing number of COVID cases worldwide and hospitals starting elective surgeries, we need to consider measures of minimising aerosol generating procedures. Microvascular surgeries are generally performed under GA as they are prolonged surgeries requiring 7 to 8 hrs. We are reporting a case of diabetic foot ulcer, for which microvascular radial artery forearm flap was done under regional anesthesia. Our report emphasizes the importance of regional anesthesia , which can be considered for free flaps for extremity surgeries. This is important because we are having 28% of asymptomatic COVID positive patients not being tested on regular basis [2]. Having a well thought out regional anesthesia plan to manage patients in this covid era will ensure the best possible outcome for the patient and perioperative healthcare team.

KEYWORDS

Regional Anesthesia, Microvascular Surgery, COVID-19

INTRODUCTION:

The COVID-19 pandemic has thrown surgical systems worldwide into unprecedented array. Elective surgery has stopped in order to safeguard patients and healthcare professionals, and at the same time preserve scarce healthcare resources. This pandemic is anticipated to stay with us for an extended period of time. An indefinite suspension of elective surgery is not practical as this would have deleterious implications on patient care. Hence recommencing elective work is not without risks. Hence preplanning should help minimise these risks. The key challenges lie in deciding of optimal timing, working with limitations and ensuring safety of healthcare workers and patients involved.

Case History:

A 42 year male obese patient, known diabetic type-2 from last 8 years on medication (at present on Human Actrapid Insulin 40-0-30 U and Tab. Galvas 50 BD), sugar not very well controlled. HbA1c 8.5. He developed abscess and cellulitis of sole of right foot, for which he underwent debridement in December 2019 in an outside hospital. Presented to us with chronic non healing ulcer on right foot on the sole since then. In between regular dressings were done for the ulcer in outside hospital. On examination there was approximately 6x6x2cm ulcer on the sole of right foot just proximal to the base of toes with hypertrophic surrounding rim of skin. The vascular examination of foot was normal. Sensations on sole reduced. Bones of foot normal, with no osteomyelitic changes (Figure 1). Right lower limb doppler was suggestive of biphasic flow in lower limb arteries. Ulcer required cover to prevent further deterioration, so Radial artery forearm free flap was planned for reconstruction under regional anesthesia (left upper limb block + spinal anesthesia). As ulcer was on plantar aspect, weight bearing area, skin grafting was not feasible(Figure 2). Local flaps couldnt be done as ulcer was in metatarsal area. In free flaps, ALT not feasible as patient was obese. Hence decision was taken to go ahead with RAFFF. After preoperative fitness and controlling sugar levels patient was taken in surgery. Axillary block (10ml bupivacaine + 20ml lignocaine+adrenaline 1.5%) given and RAFFF harvested, but kept perfused. Intraoperatively position changed and spinal anesthesia (dexmed 50microgram + 3cc 0.5% sensorcaine) given. Spinal anaesthesia can produce hypotension, hence normothermia and adequate volume replacement maintained throughout surgery, avoiding hypotension[3].

Recipient area prepared and SSG harvested. Flap detached. Flap was sutured to resurface the defect. Radial artery anastomosed with medial plantar artery and accompanying venae commitantes with medial plantar artery venae commitantes, and superficial vein in forearm with saphenous vein (Figure 3). Secondary cover with SSG done by one team and microvascular anastomosis done by second team. Total surgery time was 2hrs 45mins. Postoperatively heparin infusion was given for 3 days. Recovery was uneventful, flap and donor site settled well (Figure 4). Postoperatively patient was given pressure garment and non weight bearing footwear.

Figure 1: X-Ray Foot

Figure 2: Preoperative Image

Figure 3: Intraoperative Image

Figure 4: Postoperative Image

DISCUSSION:

The aim of this article is to consider the importance of regional anaesthesia in microvascular free tissue transfer. Commonly ALT/RAFFF/LD/FREE FIBULA free flaps are done under GA. Our study emphasizes the use of regional anaesthesia for flap surgeries for extremity defects. The role of the anaesthesiologist includes the optimization of the physiological conditions for flap survival [3] . Type of anaesthesia and preoperative haemodynamics as independent risk factors for predicting the failure of flap [4]. Normothermia and normovolemia should be maintained perioperatively to improve outcomes [5]. Depending on the duration of surgery, doses for axillary block and spinal anaesthesia can be adjusted, even epidural can be added if required. Perceived advantages of regional anaesthesia are excellent analgesia, reduction in stress hormones, decrease in blood loss, reduced incidence of deep vein thrombosis and improved perfusion [4]. Regional anesthesia has important benefits in pediatric microsurgery as well and it is a safe and cost-effective alternative to general anesthesia [6]. We can optimise treatment capacity, limit healthcare worker exposure, at the same time giving good outcomes and ensure patient safety. Although our healthcare systems will continue to face significant difficulties for some time to come, thorough and thoughtful preparation for the aftermath of the first wave of the COVID-19 pandemic will help us to overcome these challenges.

CONCLUSION:

This study demonstrates that in this new normal of COVID-19 pandemic, regional anaesthesia should be considered over general anaesthesia for microvascular surgeries, which are otherwise routinely performed under general anaesthesia.

REFERENCES:

1. *World Health Organization.* WHO Director-General's opening remarks at the media briefing on COVID-19 – 11 March. Available from URL: https://www.who.int/dg/speeches/detail/who-director-general-s-opening-remarks-at-the-media-briefing-on-covid-19—11-march-2020
2. 28% of COVID patients asymptomatic: ICMR Study, *June 1, 2020.*https://timesofindia.indiatimes.com/india/28-of-covid-patients-asymptomatic-icmr-study/article show/76114774.cms
3. Adams J, Charlton P. Anaesthesia for microvascular free tissue transfer. Br J Anaesth. 2003;3:33–7. doi: 10.1093/bja cepd/mkg009
4. Lou F, Sun Z, Huang N, Hu Z, Cao A, Shen Z, Shao Z, et al. Epidural combined with general anaesthesia alone in patients undergoing free flap breast reconstruction. Plast Reconstr Surg. 2016;137:502. doi: 10.1097/01.prs.0000479933.75887.82
5. Matakef S, Mountziaris PM, Ismail IK, Agag RL, Patel A. Emerging paradigms in perioperative management for microvascular free tissue transfer. Plast Reconstr Surg. 2015;135:290. doi: 10.1097/PRS.0000000000000839
6. Bjorklund KA, Venkatramani H, Venkateshwaran G, Boopathi V, Raja Sabapathy S. Regional anaesthesia alone for pediatric free flaps. J Plast Reconstr Aesthet Surg. 2015;68:705–8. doi: 10.1016/j.bjps.2015.02.019