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Cardio-pulmonary exercise testing as a tool to assess maxillofacial free flaps patients

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Abstract

Patients for maxillofacial free flap repair may have significant co-morbidities. We have reported successful subjective clinical assessment to determine perioperative management of the free flap patient (BJOMS 2007, 2012 &13). Cardiopulmonary exercise testing (CPET) is recognised as an objective evaluation for laparotomies. We wondered whether objective CPET would parallel the subjective anaesthetist's clinical assessment for major cancer reconstruction.

Methods

All cancer patients with planned major surgery had CPET performed to determine their level of cardiorespiratory reserve. The anaesthetist made a clinical assessment of patient function and this was compared with the CPET. Similarly to laparotomies an anaerobic threshold (AT) of 11 was used to help determine the postoperative care level. This was discussed with the surgeon to see whether it affected surgical technique.

Results:

40 operations were performed over 18 months. 30 patients underwent CPET. Ten could not be tested due to time constraints but had a successful outcome. Three patients were ASA III. CPET altered the level of planned postoperative care in 9/30 (30%). CPET influenced the surgical technique in 6(20%) patients. Radiotherapy replaced surgery in 3 patients. Two received a pedicle flap due to poor reserve. One patient had a free flap instead of local reconstruction due to higher performance.

Conclusion

CPET identified several patients with functional capacity differing from clinical assessment altering management. CPET assessment gives more information about physiological reserve than just AT and could be considered as an objective assessment of these patients.

Biography

Laith Al-Qamachi is a Specialty Registrar in Oral & Maxillofacial Surgery in Birmingham , UK. He has been recently appointed as the trainee representative of Oral & Maxillofacial Surgical Specialty Group of the Royal College of Surgeons of Edinburgh. He has special interest in Head & Neck reconstruction. He believes that peri-operative management of these complex cases does play a key role in improving outcomes. This has been his focus over the last two years.