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Categorisation of flap reconstruction results to reflect outcomes and process in the management of head and neck defects

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Please provide details in the table below of each author(s) contribution to the submitted manuscript

AUTHORS	Conception and design of study/review/case series	Acquisition of data: laboratory or clinical/literature search	Analysis and interpretation of data collected	Drafting of article and/or critical revision	Final approval and guarantor of manuscript
M W Ho	Y			Y	Y
M Nugent	Y			Y	Y
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Mr Kaveh Sahkib
Editor of BJOMS

10 February 2019

Dear Kaveh,

Categorisation of flap reconstruction results to reflect outcomes and process in the management of head and neck defects

On behalf of my co-authors, I would like to submit this letter for publication in BJOMS as a letter or perhaps an editorial. The proposed classification we believe reflects the process of flap reconstruction more meaningfully. This would contribute constructively in the clinical governance process to enable and support learning. The letter is timely within the context of the development of Quality Outcome Measures in Oral and Maxillofacial Surgery (OMFS). It would be crucial that colleagues are engaged constructively. The co-authors reflect the representation from the major centres and main geographic areas within the UK for OMFS reconstruction, hence we hope that you would make allowance for us exceeding the conventional limit of 5 co-authors for letter submissions. In addition, the draft letter was made available for comments in the BAOMS Reconstruction SSIG web discussion forum for a period of 4-weeks and the feedback from colleagues have been included in the final version of the letter.

I hope that you would give submission due consideration. Thank you.

Yours sincerely,

A handwritten signature in cursive script, appearing to read 'milly', with a small dot at the end.

Michael Ho

Categorisation of flap reconstruction results to reflect outcomes and process in the management of head and neck defects

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Categorisation of flap reconstruction results to reflect outcomes and process in the management of head and neck defects

Dear Editor,

The reporting of outcomes of flap reconstruction in the literature has often been based around numerical success rates(1-3). Whilst this remains a useful parameter in benchmarking the success rates of reconstructive surgical procedures, it has been limited in informing the more holistic process of reconstructive outcomes(1, 2, 4). The lack of consistency in categorising outcomes of flap reconstruction in the head and neck could potentially lead to loss of opportunity to fully capture the implications of reconstruction success and/or failure. The outcome of flap reconstruction is not always binary in nature and can on occasion sit within the spectrum between complete success or failure. The processes required to appropriately manage the residual defect are not consistently reported comprehensively, leading to a loss off opportunity in defining the impact of reconstructive failure on the burden of care for patients. A classification of flap reconstruction outcomes is proposed which suggests a move away from primarily reporting the binary nature of flap reconstruction results and brings the focus more towards the process of flap reconstruction, especially in the head and neck (Tables 1 and 2). The intention in adopting the classification would be to:

- a. reflect the complexity of flap reconstruction outcomes succinctly,
- b. inform clinicians and organisations of the processes involved in the management of partial and/or complete flap successes and/or failures
- c. contribute to the appraisal and governance processes for surgical reconstructive teams when evaluating results and outcomes and
- d. more accurately define the process and outcomes of flap reconstructive surgery, allowing constructive support and input to teams who may require support.

In cases where more than a single flap is required to adequately reconstruct a defect, each flap utilised should be assigned an outcome category. Definition of a surgeon's involvement in a

reconstructive procedure would include harvest, inset or microvascular anastomosis elements of the free flap. It is important to ensure that the outcomes proposed have an element of longevity as adverse flap reconstruction outcomes can occasionally present late. Therefore, the outcomes should be recorded based on the clinical status of reconstruction 4-months after the date of surgery to allow enough time for evaluation of the flap reconstruction following completion of adjuvant treatment when indicated.

The proposed system does not reflect any functional outcome or correlate with any quality of life outcome measures, which would be beyond the scope of the classification and perhaps too complex to simplify succinctly. The interpretation of flap reconstruction outcomes data must take into consideration denominators of complexity such as patient comorbidity scores (robust and uniform) and previous interventions e.g. surgery, radiotherapy or chemoradiotherapy.

Table 1. Categories of results/outcomes for free tissue transfer reconstruction

Free tissue transfer reconstruction outcome categories	Description	
1 – Reconstruction successful	1a	Complete success
	1b	Partial success with loss of some components of flap, however secondary reconstruction or prosthesis was not required
2 - Partial failure: some component of flap loss, and secondary reconstruction or prosthesis was required to rehabilitate defect (based on intention to treat)	2a	Second flap (free or pedicled) required to rehabilitate residual defect
	2b	Prosthesis utilised to address residual defect
3 – Complete flap failure	3a	Second flap (free or pedicled) required to rehabilitate residual defect
	3b	Prosthesis utilised to address residual defect
	3c	Residual defect did not require further reconstructive procedure or prosthetic rehabilitation
<i>Option for addition of further subcategories for outcome 3a/b/c e.g. 3a.i</i>	<i>i</i>	<i>Arterial failure</i>
	<i>ii</i>	<i>Venous failure</i>
	<i>iii</i>	<i>Uncertain/other causes e.g. microcirculatory</i>
4 – Failure to establish reconstruction	4a	Flap harvest attempted but abandoned due to unfavourable anatomy e.g. inadequacy of perforators in MSAP* or ALT**
	4b	Flap harvested but abandoned due to failure to perfuse prior to release from donor site or inadequacy of recipient vessels available e.g. more extensive ablation required
	4c	Flap harvested and transferred to recipient site but abandoned/discarded due to failure to perfuse after attempted anastomosis to recipient vessels

*medial sural artery perforator

** anterolateral thigh

Table 2. Categories of results/outcomes for pedicled flap reconstruction

Pedicled tissue transfer reconstruction outcome categories		Description
1 ^p – Reconstruction successful	1a ^p	Complete success
	1b ^p	Partial success with loss of some components of flap, however no secondary reconstruction or prosthesis was required
2 ^p - Partial failure: some component of flap loss, and secondary reconstruction or prosthesis was required to rehabilitate defect (based on intention to treat)	2a ^p	Secondary flap required to rehabilitate defect
	2b ^p	Prosthesis utilised to address residual defect
3 ^p – Complete flap failure	3a ^p	Second flap (free or pedicled) required to rehabilitate residual defect
	3b ^p	Prosthesis utilised to address residual defect
	3c ^p	Residual defect did not require further reconstructive procedure or prosthetic rehabilitation
<i>Option for addition of further subcategories for outcome 3a/b/c^p e.g. 3a.i^p</i>	<i>i</i>	<i>Arterial failure</i>
	<i>ii</i>	<i>Venous failure</i>
	<i>iii</i>	<i>Uncertain/other causes e.g. microcirculatory</i>
4 ^p – Failure to establish reconstruction	4a ^p	Flap harvest attempted but abandoned due to unfavourable anatomy e.g. inadequacy of vascularity or perforators in supraclavicular or submental island or internal mammary artery perforators
	4b ^p	Flap harvested but abandoned due to failure to perfuse prior to release from donor site

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