



# The ultimate prognosis for face allotransplantation: fantasy or reality?

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In spite of our sometimes impressive egos, all reconstructive surgeons are quite aware that we are limited in our abilities to completely restore the normal appearance of all those disfigured, in spite of the expectation or perhaps fantasy of the layperson that we are somehow magicians that can transform even the most grotesque into a beauty to behold. Tissue engineering has been suggested as a better means to manufacture any necessary body parts, but quite frankly, little pragmatic progress has occurred in the past decade. For this reason, vascularized composite allotransplantation (VCA) may at the present be the more practical solution for those clinical challenges that cannot be solved with traditional procedures. This extraordinary advance to date has not been without some ethical concern, as Marchac *et al.* (1) pointed out that all articles on this subject before 2002 categorically stated that face transplantation was not ethically justifiable; but since 2008 these concerns have been counterbalanced by a recognition of potential benefits for some patients.

The prospective, long-term follow-up and summary of results by Lantieri *et al.* (2) was intended not to just document their personal observations on facial VCA; but provide a vehicle to assist in answering the puzzling question as to its risk: benefit ratio and determination whether such treatment can ever become the standard of care, or will it continue to be an experimental procedure. This group has performed 7 face VCAs beginning 9 years previously, which they state is the largest face transplant series in the world and that with the longest follow-up. Their mean follow-up was 6 years; but 2 patients died prematurely, one at

65 days after transplant due to transplant destruction related to a pseudomonas infection, and the other, a self-inflicted ballistic injury patient, who at 3.4 years post-transplant committed suicide.

In general, all their patients had good functional as well as aesthetic outcomes as shown in figures within the manuscript, not only in the short-term but also long-term. Challenges over the long term could be subdivided into three categories—psychological, technical and functional, or immunological in origin. Revisions to improve appearance or function were common events, so facial VCA was never a once and done event. Acute rejection episodes requiring high dose steroid or other drug regimen alterations involved all patients, averaging 0.2–1 per year; but never altered face function nor appearance. No attempt was made to wean any patient from their selected immunosuppression protocol. Chronic rejection admittedly occurred yet demonstrated no vasculopathy, but primarily progressive lymphedematous changes in the skin. In contrast to these constant occurrences, improvements in the social integration and quality of life of this group were highly variable. This depended mainly on the baseline levels and psychiatric co-morbidities of the individual patient and any existing social support. For example, the patients with self-inflicted ballistic injuries did poorly compared to the other individuals.

Other investigators have found similar results for face VCA patients, either those they have treated or reviewed by an extensive search of literature and lay sources (3–6). Sosin *et al.* (3) have reported the risk of antibody-

rejection in a sensitized patient, malignancies including skin cancer as common in solid organ transplants, and complete facial allograft rejection following cessation of immunosuppression. In spite of these risks, none of the patients of Lantieri *et al.* (2) stated that they had any regret in having undergone facial transplantation. Interestingly, all also considered the donor to be their own face, reflecting their personality and emotions.

Breidenbach *et al.* (4) after a rigorous statistical analysis of both hand and face transplantations argued that certain hand transplants now can meet the standard of care. However, face allotransplantations presently require more numbers and more time in follow-up to better define the inclusion or exclusion criteria of potential candidates before a similar verdict can be forthcoming (4). On the one hand, Marchac *et al.* (1) believe that even children should not be excluded from consideration for face VCA if in their best interest. Yet in conclusion in their "Discussion", Lantieri *et al.* (2) suggest that the ideal selection criteria for face VCA candidates has yet to be determined; and that "moderation and prudence" in choosing individuals for this extraordinary surgery be observed, with the assurance that long-term monitoring and strict control of each patient is possible to check compliance and treat adverse events that are inevitable. Although most microsurgeons will never be involved in total face transplantation, the dream of many of us to provide our patients just with the perfect nose, the perfect ear, or perfect other lost part that we know we cannot replicate with our rudimentary flaps and grafts will just have to wait for another day.

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