

Commentary

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Plastic surgeons: critical members of the mass casualty team

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Plastic and reconstructive surgeons are uniquely positioned to care for a variety of patients in all walks of life. We routinely take part in the multidisciplinary care that ranges from prenatal consultation for congenital abnormalities such as cleft lip and palate to nuanced reconstructive care of our aging population after tumor extirpation. This intimate involvement in the acute management and longitudinal follow-up is exemplified in traumatic extremity reconstruction.

Extremity reconstruction, like other aspects of plastic surgery, is governed by principles that allow us to tailor sophisticated solutions to challenging problems^[1]. Crystal *et al.*^[2] highlight the full spectrum of solutions using all rungs of the reconstructive ladder. To add to an already comprehensive list are two additional innovative treatment modalities particularly germane to extremity reconstruction. These are the use of “spare parts”^[2-4] and considering the possibility of future vascularized composite allotransplantation (VCA)^[5]. Spare parts surgery is particularly appropriate in mass casualty incidents and blast injuries, as these can cause devastating segmental loss of domain with potentially viable distal tissues. These instances may present the opportunity for innovative use of these otherwise discarded tissues or “spare parts” as heterotopic or nonanatomic replantation or rearrangement. Over two decades since the first upper extremity VCA, transplantation now factors in the planning and execution of surgical plans to preserve limb length in lieu of optimal prosthetic fit^[6]. VCA has ushered new possibilities to fully restore and make whole whilst fulfilling Sir Harold Gillies’ dictum of replacing like with like^[7].



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Plastic surgeons have a comprehensive reconstructive armamentarium, and it is our responsibility to think expansively and innovatively about these problems to optimize form and function while limiting donor-site morbidity. Additionally, our knowledge of long-term functional outcomes, patient satisfaction and quality of life are fundamental to our specialty and daily work. These outcomes are particularly important to the care of patients affected by severe extremity trauma. As has been previously described, factors most important to patients affected by severe lower extremity injuries include their physical capacity and functional status, pain level, and the ability to return to work, among other factors^[8]. As this article and other similar collective experiences have suggested, reconstructive plastic surgeons remain a central participant in the care of complex trauma patients^[9,10].

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Authors' contributions

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Critically revised the manuscript: Talbot SG

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Conflicts of interest

All authors declare that there are no conflicts of interest.

Ethical approval and consent to participate

Not applicable.

Consent for publication

Not applicable.

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REFERENCES

1. Talbot SG, Pribaz JJ. Sophisticated surgical solutions for complex wound problems. *Clin Plast Surg* 2012;39:325-40.
2. Crystal DT, Ibrahim AMS, Lin SJ. The role of plastic surgeons in extremity reconstruction following mass casualty incidents. *Plast Aesthet Res* 2019;6:1.
3. Lin CH, Webb K, Neumeister MW. Immediate tissue transplantation in upper limb trauma: spare parts reconstruction. *Clin Plast Surg* 2014;41:397-406.
4. Peng YP, Lahiri A. Spare-part surgery. *Semin Plast Surg* 2013;27:190-7.
5. Shores JT, Brandacher G, Lee WPA. Hand and upper extremity transplantation: An update of outcomes in the worldwide experience. *Plast Reconstr Surg* 2015;135:351e-60e.
6. Singh M, Li H, Nuutila K, Collins KC, Wall J, et al. Innovative techniques for maximizing limb salvage and function. *J Burn Care Res* 2017;38:e670-e677.
7. Gillies HD, Millard DR. *The Principles and Art of Plastic Surgery*. Boston: Little, Brown; 1957.
8. O'Toole RV, Castillo RC, Pollak AN, MacKenzie EJ, Bosse MJ, et al. Determinants of patient satisfaction after severe lower-extremity injuries. *J Bone Joint Surg Am* 2008;90:1206-11.
9. Kim PS, Malin E, Kirkham JC, Helliwell LA, Ibrahim AM, et al. The Boston marathon bombings: the early plastic surgery experience of one Boston hospital. *Plast Reconstr Surg* 2013;132:1351-63.
10. Carty MJ, Caterson EJ, Caterson SA, Chun YS, Erdmann-Sager J, et al. Why we are here: early reflections on the role of reconstructive plastic surgery in the 2013 Boston marathon bombings. *Plast Reconstr Surg* 2013;132:1623-7.