

Total abdominal wall transplantation for complex transplant cases—experts outline technique

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For some patients undergoing intestinal or multi-organ transplantation, closing the abdominal wall poses a difficult surgical challenge. Total abdominal wall transplantation provides an alternative for abdominal closure in these complex cases, according to a state-of-the-art approach presented in the June issue of *Plastic and Reconstructive Surgery*, the official medical journal of the American Society of Plastic Surgeons (ASPS).

ASPS Member Surgeon David Light, MD, and colleagues of the Cleveland Clinic identify the anatomy and describe a dissection technique for total abdominal wall transplantation. They believe their approach provides a new option for [organ transplant recipients](#) with severe abdominal wall defects, when conventional reconstructive techniques aren't sufficient to close the abdomen.

Experts Outline Approach to Abdominal Wall Transplantation

In some patients undergoing intestinal and/or multiple organ transplants, gaps or defects of the abdominal wall make it difficult to close the abdomen using the patient's own tissues. Several factors contribute to these problems—particularly the fact that these patients typically have a long history of serious health issues with many previous surgeries.

One study found that traditional abdominal wall closure was not possible in 20 percent of intestinal [transplant](#) patients. Partial abdominal wall transplant techniques have been reported, but these do not provide sufficient coverage for the largest abdominal wall defects.

In a series of cadaver dissections, the researchers demonstrate the anatomy of the abdominal wall, with special attention to the four major arteries providing its blood supply. Their paper includes imaging studies illustrating each artery's contribution to blood flow in the abdominal wall.

The researchers also outline a system classifying the various types of abdominal wall defects and the appropriate options for achieving closure. Conventional reconstructive techniques are suitable for patients with less-extensive defects, Dr. Light and colleagues believe that total abdominal wall transplantation is most appropriate for cases in which the [defect](#) comprises at least half of the abdominal wall.

Abdominal wall transplantation is a vascularized composite allotransplant (VCA)—a term referring to transplant procedures combining different types of tissues, such as skin, muscle, and blood vessels. Face and hand transplants are the best-known types of VCA.

Abdominal wall transplantation is an option for [patients](#) who are also undergoing organ transplantation—and thus will already be taking lifelong immunosuppressive therapy to prevent transplant rejection. A recent article in *Plastic and Reconstructive Surgery* reported the successful [use of a VCA to reconstruct a complex scalp defect](#) in a patient undergoing a kidney/pancreas transplant.

Dr. Light and coauthors believe that total abdominal wall transplantation should be considered among the alternatives for intestinal or multiple [organ transplant patients](#) who have major abdominal wall defects that

can't be managed by conventional reconstructive techniques. The researchers add, "Our algorithm will guide practicing surgeons in the reconstruction of complex abdominal wall defects."

More information: David Light et al. Total Abdominal Wall Transplantation, *Plastic and Reconstructive Surgery* (2017). [DOI: 10.1097/PRS.00000000000003327](https://doi.org/10.1097/PRS.00000000000003327)

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