

Plastic surgeon leads Mass General team in first U.S. penile transplant

BY KENDRA Y. MIMS

ASPS member Curtis Cetrulo, MD, and Dicken S.C. Ko, MD, a urologist and transplant surgeon, became part of history last month when they co-lead the team that performed the country's first genitourinary vascularized composite allograft (GUVCA) transplant surgery at Massachusetts General Hospital (MGH) in Boston. Twelve surgeons and more than 30 additional health-care professionals took part in the 15-hour operation that occurred May 8-9.

The recipient of the historic transplant, 64-year-old Thomas Manning, underwent a partial penectomy in the wake of a penile cancer diagnosis in 2012. Manning was on the waiting list for a transplant until a suitable organ match became available. The New England Organ Bank provided the donor organ.

The MGH team had spent the last three years conducting research, performing imaging studies, and practicing operations and anatomic dissections on cadavers to prepare for penile transplants. MGH also performed a hand transplant in 2012, which Dr. Cetrulo says helped the institution with its planning – and confidence.

'Cautiously optimistic'

Dr. Cetrulo says the initial surgery was successful – albeit with an alarming but ultimately minor post-op setback – but the



Plastic surgeon Curtis Cetrulo, MD, (above right) and urologist Dicken S.C. Ko, MD, discuss the first U.S. genitourinary vascularized composite allograft surgery during a press conference at MGH; patient Thomas Manning, 64, (right) says the procedure saved his life.

long-term outcome will take time to assess. The ultimate success of the procedure will be defined in three different areas: restoration of the normal appearance of the external genitalia, urinary function and potentially sexual function. Dr. Cetrulo notes it will take



a longer period to determine if the return of sexual function is an achievable goal, as the nerves may take six months or more to grow.

"I think we are cautiously optimistic at the moment," he tells PSN.

The patient experienced a serious complication the day after surgery and was rushed to the O.R. after he began to hemorrhage, according to news reports. Manning was quickly stabilized – but since then, the recovery has gone smoothly.

Dr. Cetrulo notes that rejection is always a concern for any transplant procedure, and MGH reports that the risk of rejection for this particular procedure is 6-18 percent in the first year – similar to many other transplants.

Organ transplant patients need to remain on an immunosuppressive-drug regimen for the rest of their lives, in order to increase the likelihood that the organ won't be rejected. However, Dr. Cetrulo and his team are currently working on ways to lower the risk-benefit ratio and decrease the requirement for anti-rejection medications.

"We hope to get people off the immunosuppressive drugs they normally need to prevent rejection," he says. "We have an experimental protocol for immune tolerance that we've worked on in our laboratory to achieve that goal. Our protocol would allow the patient to receive these allografts without the need for anti-rejection drugs."

The next step

Dr. Cetrulo and his team had begun researching the possibility of providing GUVCA transplant procedures to cancer and trauma patients, as well as wounded U.S. Armed Forces veterans, shortly after the success of the hospital's first hand transplant in 2012.

"Our patient (who received the hand transplant) has done really well," says Dr. Cetrulo. "We thought we could take what we learned from that procedure and apply it to other vascularized composite allografts. We thought the GUVCA procedure would be just an extension of that continuum, and that genitourinary tissue or penile transplantation would be the next logical step for replacing missing parts on quite distraught patients."

Studies show that the loss of genitalia from a disease or war can exert a devastating psychological toll on the patient. Dr. Cetrulo hopes this surgical milestone will open the door for wounded veterans interested in GUVCA transplants and provide them with reconstructive options to ease their despair and suffering.

"There are young men coming back from Iraq and Afghanistan who sustained very bad injuries that would have killed them if not for the superior body armor they'd been given, which protects their chest and abdomen," he says. "Unfortunately, this results in devastating injuries to the extremities, face and the genitourinary and pelvic areas."

"These patients are really despondent and often consider taking their own lives," Dr. Cetrulo adds. "There's such a feeling of hopelessness for athletic, military young guys who suddenly find themselves with an injury of this magnitude and sensitivity."

"These proof-of-principle cases will help establish the techniques used in this procedure and will forge the path to future treatment of patients with significant pelvic and genitourinary tissue loss," adds Dr. Ko. "We are delighted to have taken the first steps to

help those patients who have suffered silently for far too long."

Raising awareness

Dr. Cetrulo says he's grateful this issue is being brought to the forefront and raising awareness about patients suffering with genitourinary injuries.

"Hopefully the transplant procedure we performed on our patient will soon be applicable to other patients – civilian, post-cancer, post-trauma and wounded warriors as well," he says.

The patient, Manning, echoed that sentiment in a press statement in which he thanked his surgical team and the family of the donor, adding that he was "filled with personal hope and hope for others who have suffered genital injuries, particularly for our service members who put their lives on the line and suffer serious damage as a result." He also noted that by sharing his story with the public, he hoped to bring awareness to GUVCA.

While GUVCA transplants are currently limited to cancer and trauma patients, MGH officials have said they'll continue to evaluate candidates on a case-by-case basis, with each candidate evaluated and investigated by a multidisciplinary team to ensure that the benefits outweigh the risks of such an undertaking.

Dr. Cetrulo says his team hopes to learn from its experience with this operation and apply that knowledge to its next case. The hope is to expand this protocol to treat a wide variety of patients, he adds.

The journey to this landmark operation has been long yet rewarding.

"It's a great honor to work in a place like MGH, where we can have an excellent team with a lot of great surgeons and staff to execute this kind of procedure. That's what we are really fortunate about," says Dr. Cetrulo.

"We're also fortunate enough to have met a wonderful patient who's very courageous and willing to share his experiences with other people who are suffering from devastating genitourinary injuries," he adds, "so they can have a sense of hope about their future and options going forward." [PSN](#)

WHO classifies BIA-ALCL as a distinct type of lymphoma

BY MARK CLEMENS, MD, AND COLLEEN MCCARTHY, MD, MS

The World Health Organization (WHO) in March revised its nearly eight-year-old classification of lymphoid neoplasms, and for the first time it provisionally classifies breast implant-associated anaplastic large cell lymphoma (BIA-ALCL) as a newly recognized entity. As part of its mission, the WHO publishes classification handbooks for all neoplastic diseases based upon best available evidence and expert consensus.

The rare association of breast implants with a cancer of the immune system has created understandable concern among patients, plastic surgeons and oncologists. The newly revised WHO classification gives clarity and guidance about BIA-ALCL, and it adds to a growing number of authorities recognizing the disease.

The National Comprehensive Cancer Network (NCCN), which in 2012 released statements on BIA-ALCL, is expected to issue treatment guidelines in 2017. The International Agency for Research on Cancer (IARC) in 2014 designated BIA-ALCL a priority for further research to determine etiology. The U.S. National Cancer Institute (NCI) and the French National Cancer Institute (Agence Nationale de Sécurité du Médicament) in 2015 each separately posted specific recommendations for the treatment of BIA-ALCL.

The WHO classification of lymphomas represents a consensus among hematopathologists, geneticists and clinicians. The revision clarifies the diagnosis and management of lesions throughout the stages of lymphomagenesis; refines diagnostic criteria; and emphasizes the importance of surgical management for disease confined to the capsule, which corresponds to recommendations adopted by ASPS.

Resources are available

For physicians looking for educational background on BIA-ALCL, the Society's Plastic Surgery Education Network in May posted a three-part series on BIA-ALCL for which physicians may receive CME credit. (To find the series, go to psnetwork.org, click on "Online Courses," followed by "Browse CME Courses.")

Plastic surgeons who encounter a suspicious peri-prosthetic fluid collection greater than one year after implantation are encouraged to test the fluid for CD30 immunohistochemistry.

The FDA recommends that confirmed cases be reported specifically to ASPS/PSF's Patient Registry and Outcomes For Breast Implants and Anaplastic Large Cell Lymphoma Etiology and Epidemiology (PROFILE) registry (thepsf.org/PROFILE) – a joint partnership between ASPS, The PSF and the FDA. The PROFILE pages on The PSF website (thepsf.org) also offer resources for surgeons who encounter suspicious or confirmed cases, in order to give perspectives for diagnosing and evidence-based treatment approaches to BIA-ALCL.

BIA-ALCL remains a rare lymphoma with an unclear pathogenesis, but the understanding of many of the issues surrounding it has critically advanced through appropriate testing and increasingly knowledgeable physicians. [PSN](#)

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