

Penn plastic surgeons perform world's first robotic bilateral breast reconstruction

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A team of surgeons from the Perelman School of Medicine at the University of Pennsylvania are the first in the world to use a surgical robot to assist with a bilateral free flap breast reconstruction—a procedure in which tissue is taken from the lower abdomen—similar to a "tummy tuck—and used to rebuild the breast. The robot allows surgeons to make a much smaller incision into the abdominal wall muscles, allowing patients to recover and be discharged more quickly and without the use of addictive narcotic painkillers. Suhail Kanchwala, MD, an associate professor of Plastic Surgery, led the team that performed the procedure, which took place at Pennsylvania Hospital earlier this month. Kanchwala partnered with Ian Soriano, MD, FCAS, a clinical assistant professor of Surgery, who specializes in minimally invasive procedures, to develop the technique.

"We've been using a minimally-invasive, laparoscopic technique to reduce pain and get patients home more quickly without using narcotics for more than a year. The addition of the surgical robot allows for greater precision and is the next step in our evolution," Kanchwala said. Women who have chosen a mastectomy, either to remove cancerous [breast](#) tissue or as preventative measure due to genetic risk, have several options for reconstruction. Traditionally, using a patients' own tissue results in a more natural appearance and is a more permanent solution when compared to implant-based reconstructions, which often require additional surgeries. Penn surgeons perform more than 700 tissue-based reconstructions yearly, making it the largest center for this form of reconstruction in the world.

"Our experience is what allows us to innovate, and adapting minimally invasive approaches to breast reconstruction allows patients to have the same recovery of implant reconstruction without the downsides of having an implant, such as the risk of infection or the need for further surgery," Kanchwala said.

The minimally invasive flap procedure virtually eliminates the need to cut into a patient's abdominal muscles to remove the skin and fat of the lower abdomen to use in the reconstruction of the breast. That incision in the muscle is the main source of pain and other potential complications. Kanchwala called the laparoscopic technique, which he has now used in more than 120 cases, "game changing." He also notes that in 70 percent of those cases, his patients did not require any narcotics, even while under anesthesia. Instead, patients receive over-the-counter medicine like Motrin or Tylenol for pain. "Many of these patients wake up as if they haven't had a [surgery](#), and we've seen patients who would normally be in the hospital for five days go home in just one or two days," Kanchwala said.

Much like with the laparoscopic technique, the [surgical robot](#) allows the surgeon to avoid larger cuts to the muscle while also collecting blood vessels more easily. The smaller incision also limits the risk of hernia and other complications.

Pain management is another unique aspect of this technique. Research has shown that one out of every 20 breast [reconstruction](#) patients who have never had a narcotic before their surgeries are still on those narcotics five years later. Kanchwala says this [technique](#) addresses this reality head-on, and it requires a team approach. All [patients](#) are enrolled in a coordinated Enhanced Recovery Protocol which means from the minute they enter the hospital the focus is on their recovery and getting them back to normal as fast as possible.

"We've paired our surgical innovations with similar progressive ideas in anesthesia and postoperative care," Kanchwala said. "Nothing I do now is the same as it was even a year ago, and knowing what I now know, I could never go back."

Provided by Perelman School of Medicine at the University of Pennsylvania

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