

Advances in breast cancer surgery

UCI Health

Whether a patient is a candidate for a lumpectomy or mastectomy, UCI Health breast surgeons use the latest techniques to precisely remove all cancerous cells while preserving healthy breast tissue, skin and nipples.

Dr. Erin H. Lin, a board-certified UCI Health surgical oncologist who specializes in breast health and surgical breast treatment, was a co-principal investigator of two clinical trials of the effectiveness of surgical devices to identify and locate cancerous cells: MarginProbe® and Savi Scout® devices.

Precision surgical techniques

Both have been approved by the FDA and results from the clinical trials were published in 2017 and 2018. These techniques not only successfully remove cancerous cells, they also have significantly reduced the need for repeat surgeries.

Lin explains how they work:

- **MarginProbe:** This device uses electromagnetic waves to test the edges of the incision to make sure all cancerous cells have been removed without taking more healthy tissue than necessary. It allows for a more accurate lumpectomy at the cellular level.
- **Savi Scout:** This device uses radar — not radiation — to locate non-palpable lumps through a chip inserted sometime before the lumpectomy is performed. Previously, surgeons had to insert a device attached to a wire on the same day as the surgery. This eliminates the necessity for two procedures on the same day and the need for a radiologist to participate in the surgery.

Hidden-scar breast surgery

Lin, who has expertise in both benign and malignant tumor lumpectomy and mastectomy surgeries, also uses techniques to preserve breast tissue, skin and nipples, as well as minimize scarring.

- A technique known as hidden-scar surgery uses the patient's natural anatomy to determine where a surgeon makes an incision so that it will be less noticeable. It's both a surgical and a cosmetic procedure.
- With this technique, Lin hides scars by making an incision in one of three places:
- The areola border (the small circle of skin surrounding the nipple)
- The inframammary fold, or at the bra line
- The armpit

Hidden-scar surgery is most often used for non-cancerous lumps, which Lin says are more common than people may think.

"Many women have fibroadenoma tissue near the breast," says Lin, who is an assistant professor in the UCI School of Medicine's Department of Surgery.

"I removed seven lumps from one patient. It was her second time. Also, it's not just women. My youngest patient was a five-year-old boy who had a cyst in his nipple."

With cancer, a patient's health naturally takes precedence over cosmetic issues. But for some cancer patients, hidden-scar techniques also may be an option depending on the extent and location of the tumor and the breast size.

"If cancer is diagnosed at an early stage, it is possible to do an entire mastectomy from the inframammary fold," Lin says. "We can preserve the skin, nipple and areola, allowing a plastic surgeon to do an immediate reconstruction."

UCI Health offers breast health services at Pacific Breast Care Center in Costa Mesa, UCI Health Chao Family Cancer Center in Orange and UCI Health Yorba Linda — Multispecialty in Yorba Linda. Lin sees patients in Orange and Yorba Linda.