Researchers at the University of South Florida have designed a needle, wire, dilator percutaneous system with the use of a tearaway sheath to place a device for radiation delivery into the breast for cancer treatment.

Insertion of proxima brachytherapy can be done as an operative technique at the time of lumpectomy but requires long term placement of the device until pathology is accurately determined.

Our invention is a 18 ga needle with flexible wire used to insert tapered dilators into the biopsy catheter with a dilator containing a tearaway sheath which will accommodate the size of the mammosite brachytherapy catheter. Placement would be more appropriate at our facility if done at two weeks post-operation from lumpectomy time.

Similar technology exists for dilators for percutaneous tracheostomy sets and for percutaneous nephrostomy dilators with the exception of the large tearaway sheath. Although these technologies do not combine multiple uses as our invention combines. Also, some of the devices in the market require a counter incision into the cavity so that the catheter may be placed. Our invention eliminates the need for counter incision.

Our technology can also be used in other applications such as placement of nephrostomy catheters, or percutaneous cystomy catheters. Our technology is safer, easier to apply for patient and physician. Placement using a needle wire, dilator system directed by ultrasound could improve positioning of the device in the late post-operation time.

Advantages:
- Eliminates the need for counter incision
- Easier to apply for patient and physician
- Safer alternative

System to insert brachytherapy catheter with minimal incisions

Brachytherapy catheter inserted into affected breast

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