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International Conference on
Internal Medicine & Practice and Primary Care
&
International Meeting on
Breast Pathology & Cancer Diagnosis

April 04-05, 2018 | Miami, USA

Breast cancer cryoablation - offering patients a choice

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Percutaneous ultrasound (US)-guided cryoablation is a minimally-invasive technique that kills targeted tissue with extreme cold. We are enrolling patients in the FROST clinical trial aimed at determining the rate of successful tumor cryoablation instead of surgical resection in univocal IDC, less than 1.5 cm in size, at least 0.5 cm from skin, ER/PR+ HER2-, and clinically node negative. We are also offering cryoablation as an alternative to surgical resection in selected patients excluded from the trial. The procedure is performed in the breast imaging center using local anaesthesia. Ultrasound is used for needle placement and intraprocedural monitoring. The Sanarus Visica 2 Treatment system 10-gauge needle is placed through the center of the tumor. The device uses closed loop circulation of liquid nitrogen creating an ice ball. The freeze-thaw-freeze treatment cycle is 6-10-6 minutes for tumors less than 1 cm and 8-10-8 minutes for tumors up to 2 cm. Intraprocedural saline hydro dissection protects the skin. Periodic lifting up of the ablation probe protects the chest wall with the patient supine. Four patients have been treated off-trial at our facility between July and November 2017, age 71-88. These invasive tumors were of any histology, up to 1.8 cm in size, and at least 0.2 cm from skin. All tumors were encompassed by a greater than 1 cm margin of ice on all visible sides, ensuring the tumor was encompassed by the -30 degree C lethal isotherm. All patients tolerated the procedure well with local anaesthesia. There have been no complications. Patients have been able to leave the facility within 20 minutes of procedure completion, and resume all normal activities within 24 hours. US-guided cryoablation of breast cancer is a well-tolerated, minimally-invasive treatment modality for selected patients. Long term follow up is needed to demonstrate efficacy.

Speaker Biography

Robert C Ward received his MD from the George Washington University in Washington, DC, in 2010. He then completed an internship in Internal Medicine, residency in Diagnostic Radiology, and fellowship in Women's Imaging through the Alpert Medical School of Brown University affiliated hospitals, including Rhode Island Hospital and Women and Infants Hospital. He specializes in breast imaging and intervention, including ultrasound-guided breast cryoablation. His research interests also include the immune response to cryoablation.

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