



ECO Microwave Ablation **Minimally Invasive Treatment** **for Breast Tumors**

Shorter operation time · Quicker recovery

Incidence rate of benign breast tumors

Benign breast tumor is a common breast disease, more common in young women, the probability of developing into a malignant tumor is very small. However, benign tumors grow slowly, especially during pregnancy. Due to the changes of hormones in the body, a small number of benign tumors will grow rapidly or even become malignant. During the period of suffering from benign tumors, regular examinations are needed to monitor the growth of tumors.

Fibroadenomas is the most common benign tumor of breast, may cause change of shape and anxiety. Possibility of malignant transformation.

Local resection	Resection will be complete, but as with all surgical procedures, breast lump removal can carry some risks, including: infection, pain, swelling, scar tissue, change in appearance of the breast.
Vacuum assisted breast circumcision	Minimally invasive operation, scar is about 2mm, but the tissue damage inside the breast is not small, and for patients with multiple or larger nodules, repeated circumcision increases the risk of bleeding.
Thermal ablation MWA, RFA, Laser	Minimally invasive, less pain, shorter operation time, won't affect appearance and function of mammary gland.

Principle of microwave ablation

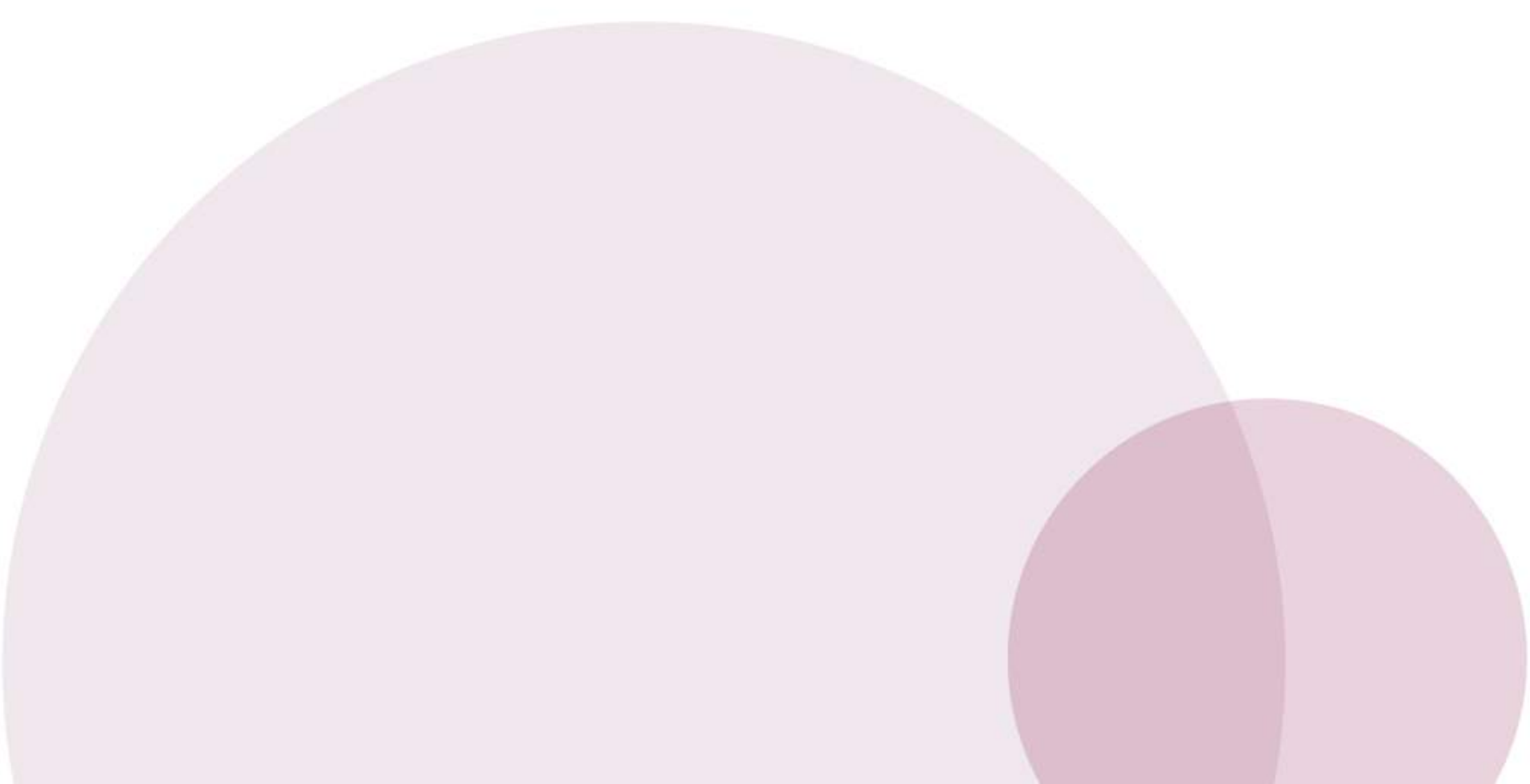
Microwave ablation is a new type of minimally invasive treatment, which is carried out under real-time monitoring of ultrasound equipment. It uses an ablation antenna with a diameter of only 2mm to penetrate into the tumor through percutaneous approach. It can kill the tumor cells by generating high temperature inside the tumor, which can avoid the resection of the lesion tissue.

Indications - Benign Breast Nodules

Tumor size smaller than 3cm in greatest diameter confirmed by using US and CEUS;
Distance between nodule and the skin and ectopectoralis ≥ 0.5 cm;
Nodule should not be located in the nipple areola area;
Patient requests for the treatment and has beauty needs.

Indications - Breast Fibroadenoma

- B-RADS grade 3 or conventional ultrasound BI-RADS grade 4A and contrast-enhanced ultrasound or breast MRI result indicates grade 3; for patients over 35 y/o, BI-RADS grade 3 or below;
- The tumour smaller than 3cm in greatest diameter confirmed by using US and contrast-enhanced us (CEUS);
- Fibroadenoma confirmed by core needle biopsy;
- For multiple tumors, breast MRI evaluation can be considered, and the following conditions must be met:
 - (1) Longest diameter measured by ultrasound and contrast-enhanced ultrasound is 1-3 cm;
 - (2) Distance between tumor and skin/ectopectoralis ≥ 0.5 cm;

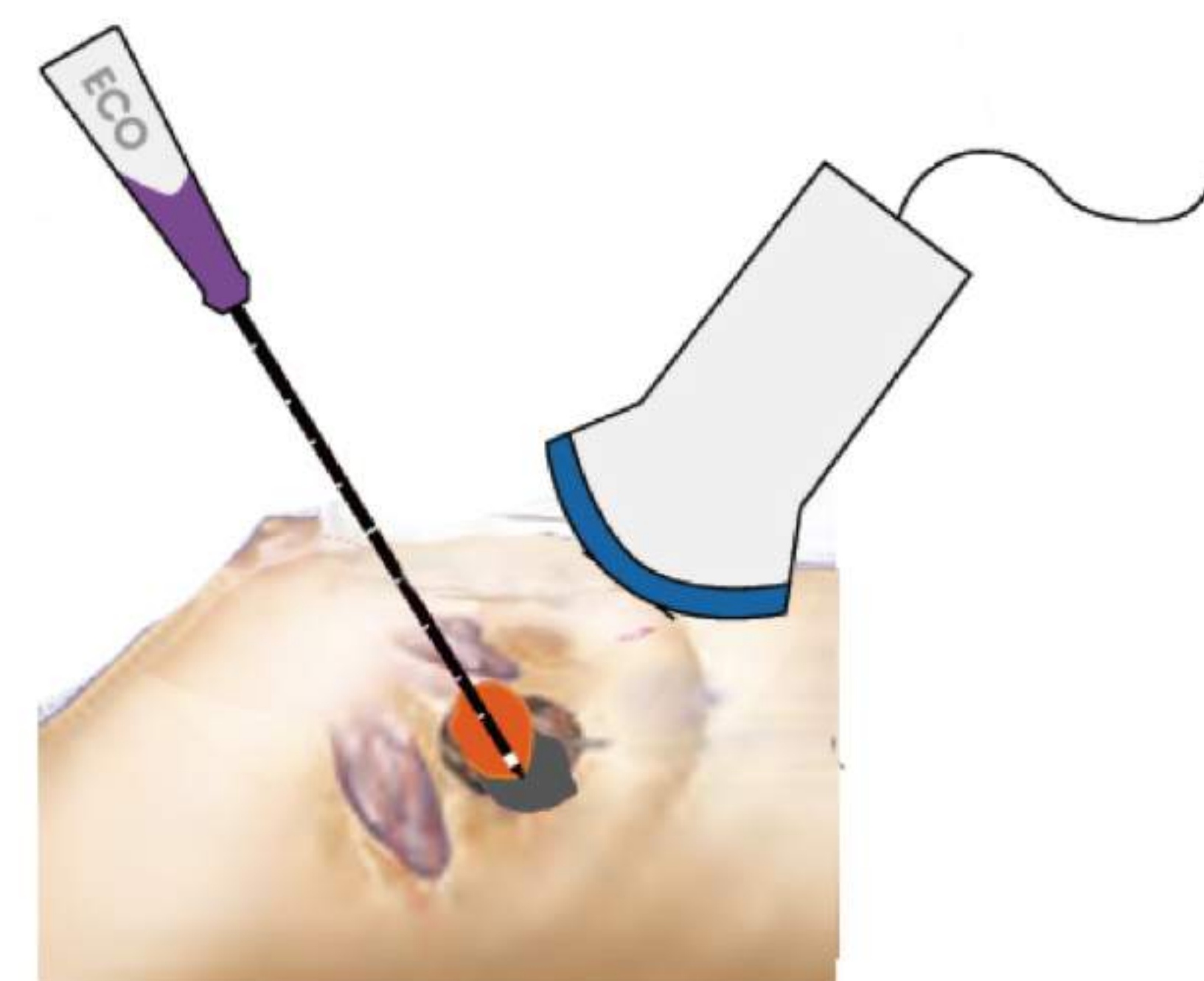


Comparison of different treatment methods

Low frequency radio-waves	Stable treatment temperature Only monitored by MRI Limited usage for tumor subtypes Low success ratio
High-frequency	Real noninvasive treatment Less dissipation of heat Tiny ablate target Longer treatment time
HIFU	Application scope is limited, focus area is small, needs to be repeated for many times More effective for smaller lesions with thinner abdominal wall and less blood supply Operation is time-consuming
Cryo-ablation	Ice ball could be seen under MRI Not good for larger size tumors (>2cm) Several freeze-thaw cycles during treatment Cryo-expense

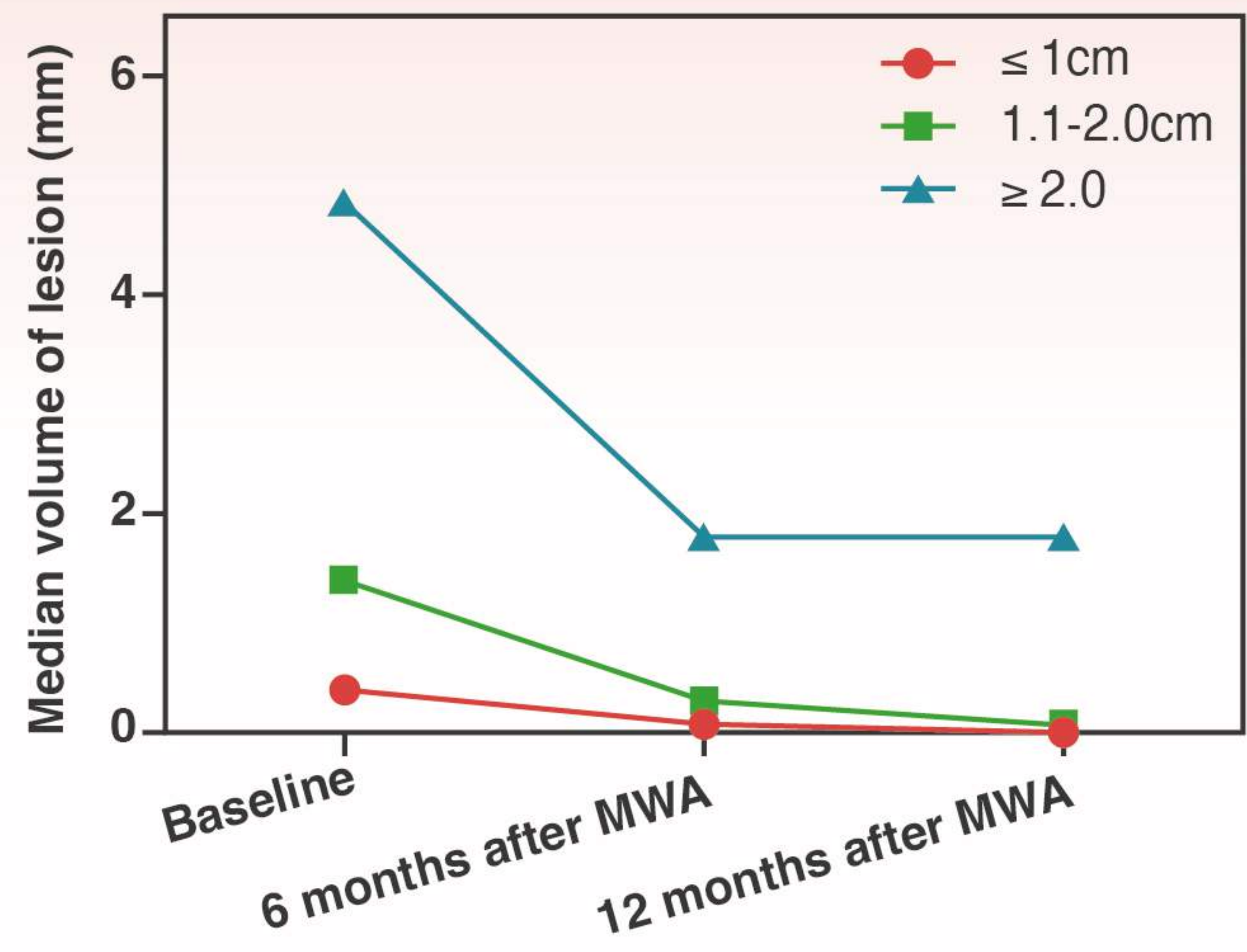
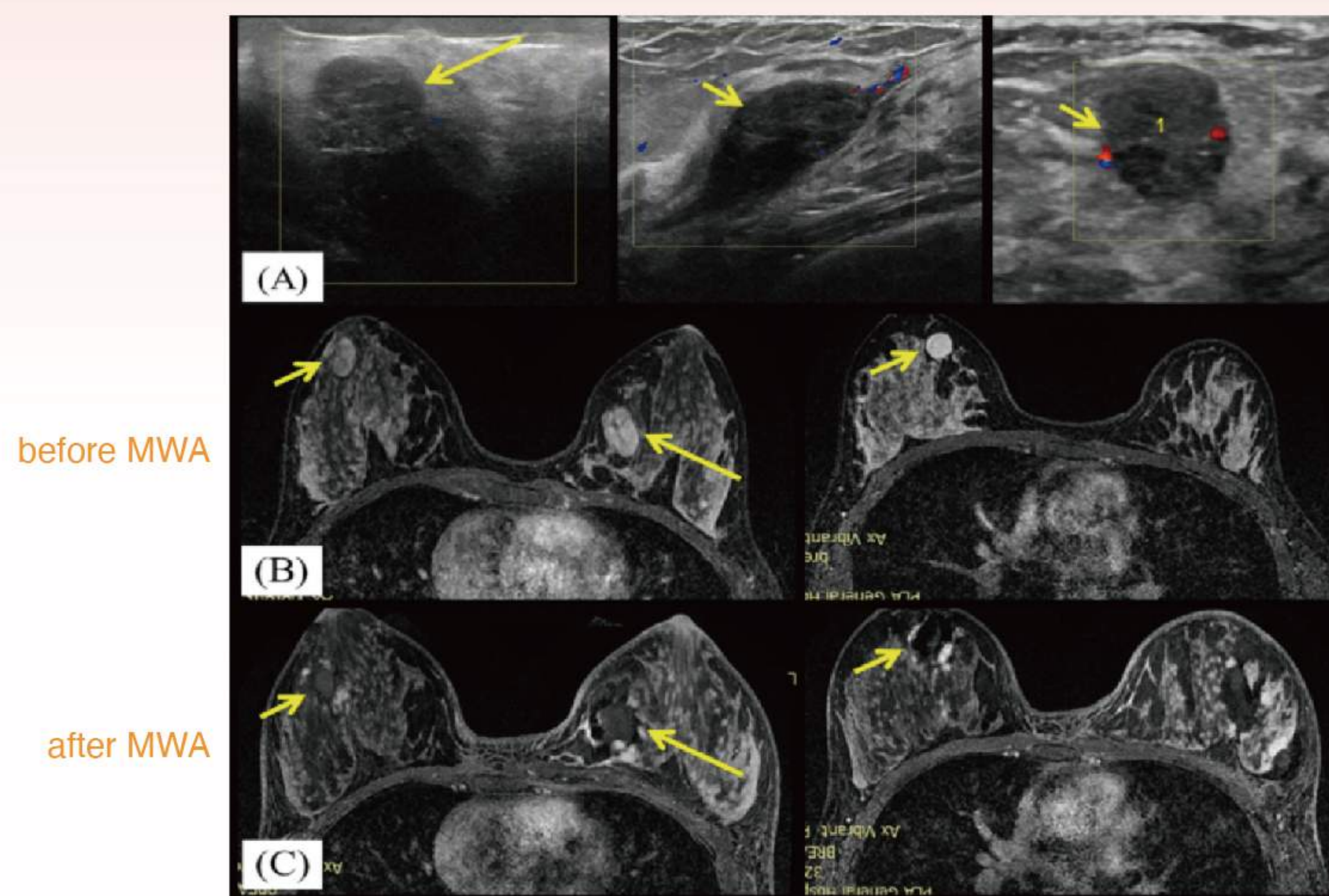
Advantages of microwave ablation for Breast Tumor

- Simple procedure, short operation time;
- More safe and effective;
- Minimally invasive "patient-friendly" procedure,
- Fast recovery with very short hospital stay;
- Less complications;
- Achieves cosmetic effect.



Case 1

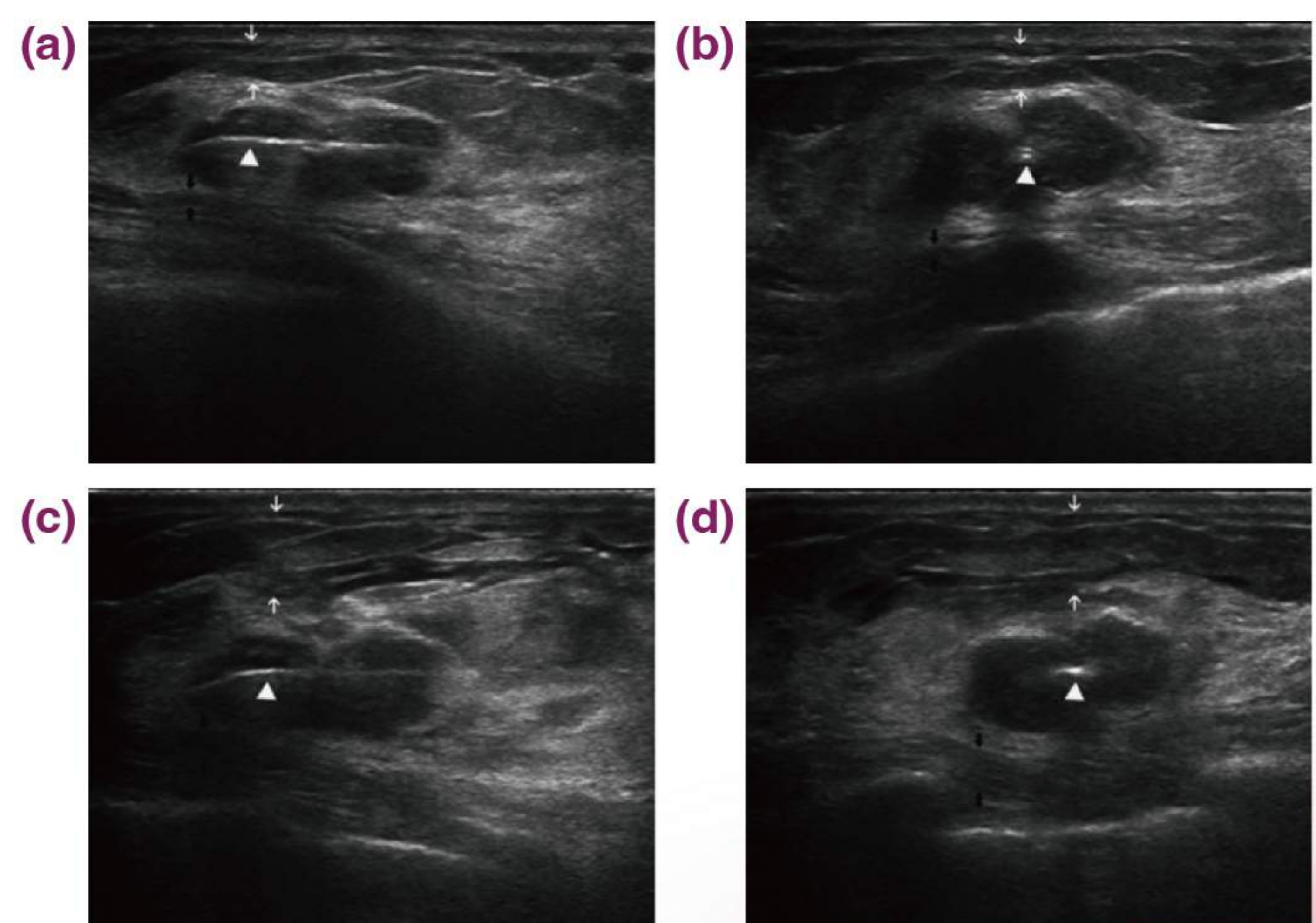
Ultrasound guided percutaneous microwave ablation of benign breast lesion



Case 2

Intraoperative US in a 34-year-old woman demonstrates the accurate placement of the antenna and successful local anesthesia.

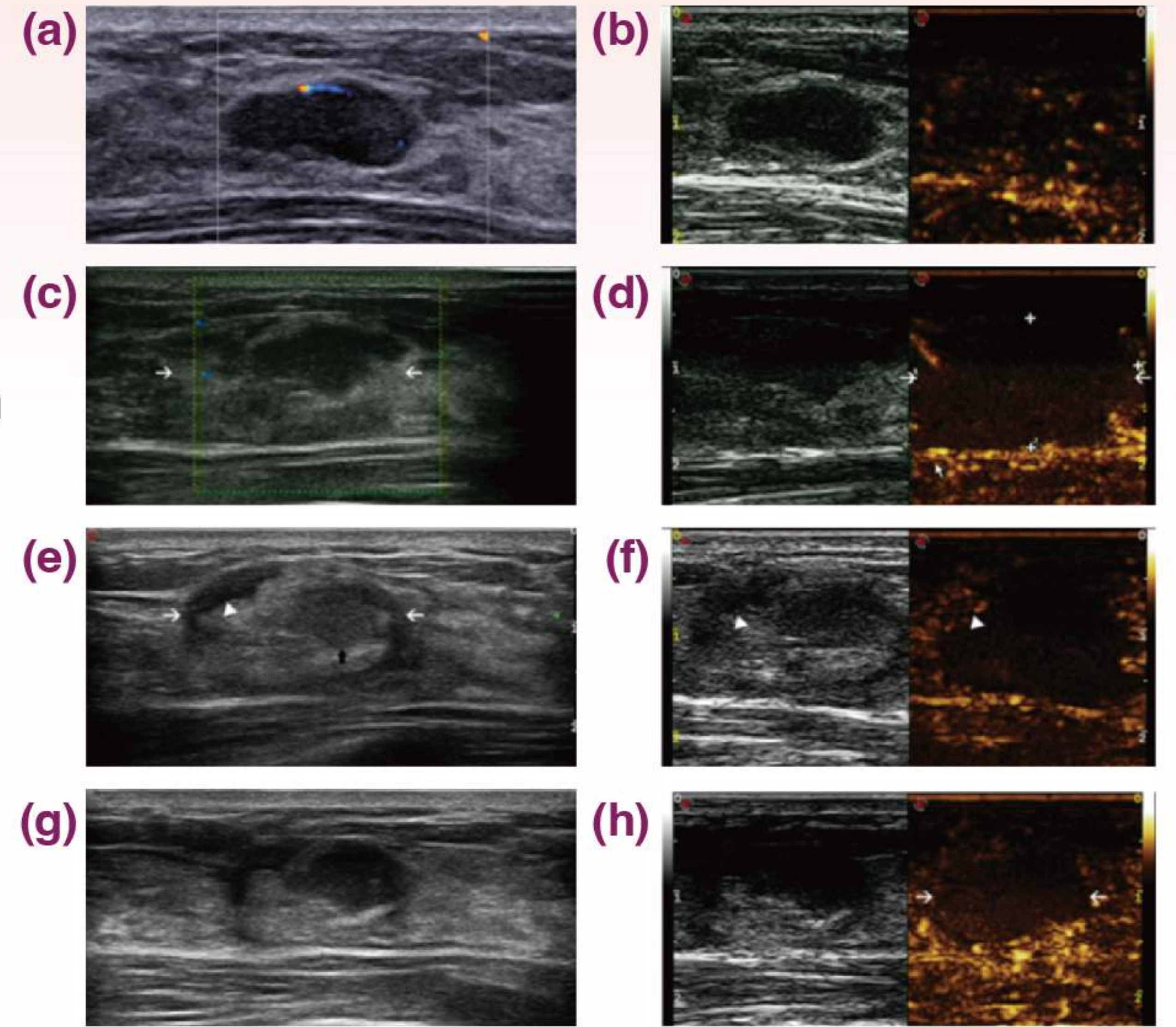
Longitudinal (a) and coronal (b) sonograms show the central placement of the antenna (arrow-head) within the tumour, indicating that the antenna was located in the center of the tumor. After accurate placement of the antenna, 1% lidocaine was injected into subcutaneous space (white arrow) and retromammary space (black arrow). Longitudinal (c) and coronal (d) sonograms show the isolation belt was formed in subcutaneous space (white arrow) and retromammary space (black arrow).



Case 3

Conventional US and CEUS images in a 28-year-old woman before ablation and during follow-up.

- (a) US shows a clear tumour before MWA.
- (b) CEUS shows enhancement before MWA.
- (c) The ablation zone (arrow) seems to be discernible but not very clear in conventional US 1 week after ablation.
- (d) No enhancement was observed in the ablation zone (arrow) in CEUS 1 week after ablation.
- (e) In conventional US 2 months after MWA, the margin (white arrow) of the ablated zone is clear. Moreover, three typical zones are observed, including the hypoechoic tumour (black arrow), the surrounding hyperechogenicity and hypoechogenicity (arrow-head) at the margin of the ablation zone.
- (f) In CEUS 2 months after MWA, enhancement is observed at the margin of the hypoechogenicity (arrow-head) in US.
- (g) 6 months after ablation, characteristics are similar to those 2 months after MWA; however, the margin of the ablation zone seems to be vague.
- (h) The area (arrow) without enhancement is smaller than before about 6 months after MWA in CEUS.

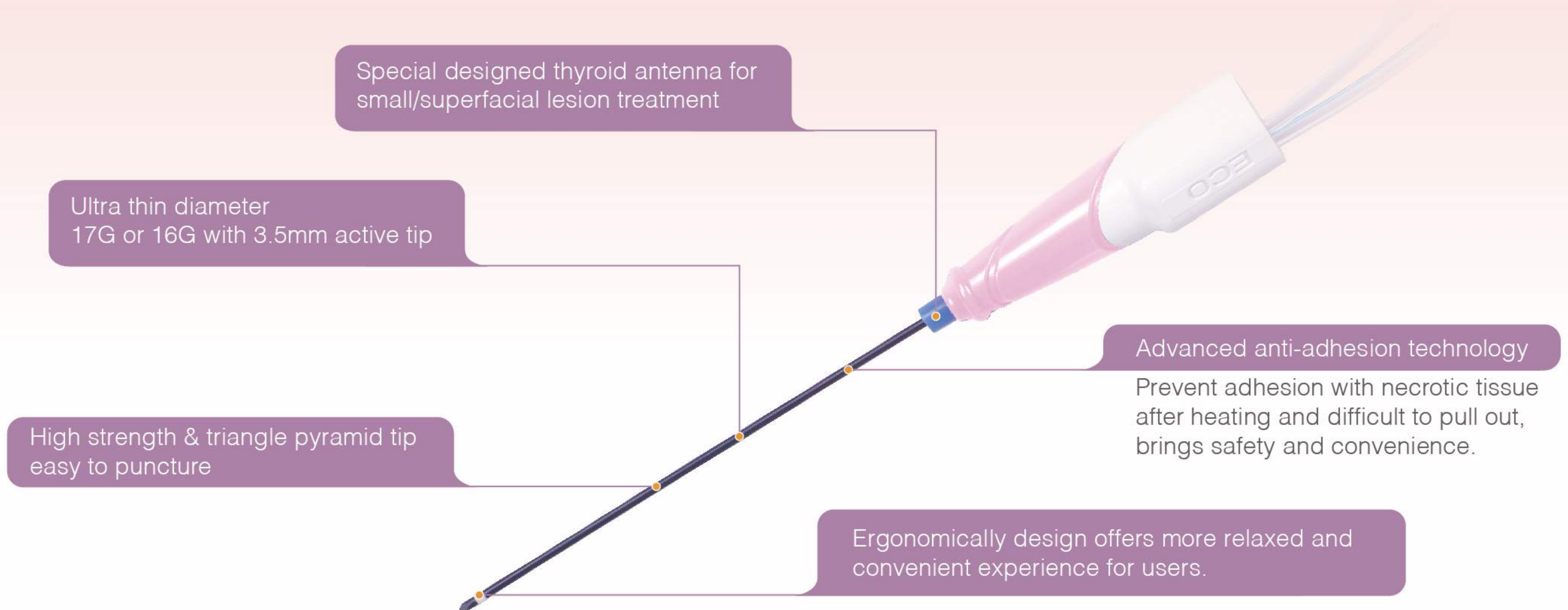


ECO Microwave Generator

- CE, FDA approved 2.45GHz water cooling Microwave System;
- Touch screen interface, easy to operate;
- Multiple safety measures, ensures effectiveness & safety;
- Special Designed Thyroid Ablation Mode;
- Pulse Mode to minimize operational pain.



ECO Microwave Antenna



About Us

Established in 2000, ECO is a medical device manufacturer in China. ECO is actively involved in microwave, high-frequency and physical therapy fields. With its vision "To Be No.1 in China and First-Class in the world", and its mission to help employees realize their self-worth and contribute more to human health, ECO is trying every effort to deliver advanced technology and provide product solutions to medical institutions at home and abroad.



ECO MEDICAL TECHNOLOGY (NANJING) CO., LTD. **(former: NANJING ECO MICROWAVE SYSTEM CO., LTD.)**

Address: 3rd & 4th Floors, J5 Building, NJUT Science & Technology Industrial Park, No.15 Wanshou Road, Jiangbei New Area, Nanjing, Jiangsu, China, 211800.

ECO Medical Instruments Industrial Park, No.19 Xinghui Road, Jiangbei New Area, Nanjing, Jiangsu, China, 210044.

Tel: +86-25-86262828

Fax: +86-25-86262777

Email: info@njeco.com.cn

Website: www.ecomicrowave.com



LinkedIn



ECO Website



Facebook



Youtube

Although we have tried our best to provide accurate and up-to-date information, no responsibility can be accepted for any mistakes contained in this catalogue. The products and descriptions, as shown in this catalogue may be changed without prior notice.