Medical Coverage Policy

Microwave Tumor Ablation

☐ Device/Equipment ☐ Drug ☐ Medical ☐ Surgery ☐ Test ☒ Other

Effective Date:	7/1/2012	Policy Last Updated:	3/6/2011

☐ **Prospective review is recommended/required. Please check the member agreement for preauthorization guidelines.**

☒ **Prospective review is not required.**

Description:
Microwave ablation (MWA) is a technique in which the use of microwave energy induces an ultra high speed, 915 MHz or 2450MHz (2.45GHz), alternating electric field which causes water molecule rotation and the creation of heat. This results in thermal coagulation and localized tissue necrosis. In MWA, a single microwave antenna or multiple antennas connected to a generator are inserted directly into the tumor or tissue to be ablated; energy from the antennas generates friction and heat. The local heat coagulates the tissue adjacent to the probe, resulting in a small, approximately 2-3 cm elliptical area (5 x 3 cm) of tissue ablation. In tumors > 2 cm in diameter, 2-3 antennas may be used simultaneously to increase the targeted area of MWA and shorten operative time. Multiple antennas may also be used simultaneously to ablate multiple tumors. Tissue ablation occurs quickly, within one minute after a pulse of energy, and multiple pulses may be delivered within a treatment session depending on the size of the tumor. The cells killed by MWA are typically not removed but are gradually replaced by fibrosis and scar tissue. If there is local recurrence, it occurs at the edges. Treatment may be repeated as needed. MWA may be used to: 1) control local tumor growth and prevent recurrence; 2) palliate symptoms; and 3) extend survival duration.

Complications from MWA are usually considered mild and may include pain and fever. Other potential complications associated with MWA include those caused by heat damage to normal tissue adjacent to the tumor (e.g., intestinal damage during MWA of the kidney or liver), structural damage along the probe track (e.g., pneumothorax as a consequence of procedures on the lung), liver enzyme elevation, liver abscess, ascites, pleural effusion, diaphragm injury or secondary tumors if cells seed during probe removal. MWA should be avoided in pregnant patients since potential risks to the patient and/or fetus have not been established and in patients with implanted electronic devices such as implantable pacemakers that may be adversely affected by microwave power output.

Based on review of the published data (which consists largely of small case series and limited randomized trials) and clinical input, there is insufficient evidence to permit conclusions concerning the comparative effectiveness of microwave ablation (MWA) to other ablative techniques on health outcomes. Therefore, MWA of hepatocellular carcinoma, liver metastases from primary cancers from other sites, renal cell carcinoma, other renal tumors and all other tumors is considered not medically necessary..

Medical Criteria:
Not applicable.

Policy:
Microwave tumor ablation is **not medically necessary** for all product lines due to insufficient published, peer-reviewed scientific literature that demonstrates microwave ablation is superior to other types of ablative treatments.

NOTE: This policy addresses noncancerous tissue, not tumor(s).

Coverage:
Benefits may vary between groups/contracts. Please refer to the appropriate evidence of coverage, subscriber agreement, or benefits booklet for applicable not medically necessary coverage/benefits.

Coding:
There are no specific CPT codes for this procedure and therefore unlisted codes such as the following should be used:

19499
47399
53899

Publications:
Policy Update, May 2012

References:

Liang P, Dong B, Yu X, et al. Prognostic factors for survival in patients with hepatocellular carcinoma after percutaneous microwave ablation. Radiology;2005;235:299–307.

Li X, Fan W, Zhang L, Zhao M, Huang Z, Li W, Gu Y, Gao F, Huang J, Li C, Zhang F, Wu P. CT-guided percutaneous microwave ablation of adrenal malignant carcinoma: preliminary results. Cancer;2011 Nov 15;117(22):5182-8. doi: 10.1002/cncr.26128. Epub 2011 Apr 26.

Ong SL, Gravante G, Metcalfe MS et al. Efficacy and safety of microwave ablation for primary and secondary liver malignancies: a systematic review. European Journal of Gastroenterology & Hepatology;2009;21(6):599-605.

Shibata T, Iimuro Y, Yamamoto Y et al. Small hepatocellular carcinoma: comparison of radio-frequency ablation and percutaneous microwave coagulation therapy. Radiology;2002; 223(2):331-7.

Shibata T, Niinobu T, Ogata N et al. Microwave coagulation therapy for multiple hepatic metastases from colorectal carcinoma. Cancer;2000;89(2):276-84.

Simo KA et al. Laparoscopic-assisted microwave ablation for hepatocellular carcinoma: Safety and efficacy in comparison with radiofrequency ablation. Journal of Surgical Oncology, 05/11/2011.

Vogl TJ, et al. Radiofrequency, microwave and laser ablation of pulmonary neoplasms: Clinical studies and technical considerations - Review article. European Journal of Radiology(2009);doi:10.1016/j.ejrad.2009.07.034.

reserves the right to review and revise this policy for any reason and at any time, with or without notice.