

Evidence Based Guideline

Radiofrequency Ablation of Osteoid Osteomas and Bone Metastases

File Name: radiofrequency_ablation_of_osteoid_osteomas_and_bone_metastases
Guideline Number: EBG.MED1348
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Description of Procedure or Service

Radiofrequency ablation (RFA) is being evaluated to treat various tumors, including inoperable tumors or to treat patients ineligible for surgery due to age, presence of comorbidities, or poor general health. Goal(s) of RFA may include 1) controlling local tumor growth and preventing recurrence; 2) palliating symptoms; and 3) extending survival duration for patients with certain tumors. The procedure kills cells (normal and abnormal) by applying a heat-generating, rapidly alternating current through probes inserted into the tumor. The effective volume of RFA depends on the frequency and duration of applied current, local tissue characteristics, and probe configuration (e.g., single vs. multiple tips). RFA can be performed as an open surgical procedure, laparoscopically, or percutaneously with ultrasound or computed tomography (CT) guidance.

Potential complications associated with RFA include those caused by heat damage to normal tissue adjacent to the tumor (e.g., intestinal damage during RFA of kidney), structural damage along the probe track (e.g., pneumothorax as a consequence of procedures on the lung), or secondary tumors if cells seed during probe removal.

After lung and liver, bone is the third most common metastatic site and is relatively frequent among patients with primary malignancies of the breast, prostate, and lung. Bone metastases often cause osteolysis (bone breakdown), resulting in pain, fractures, decreased mobility, and reduced quality of life. External-beam irradiation often is the initial palliative therapy for osteolytic bone metastases. However, pain from bone metastases is refractory to radiation therapy in 20–30% of patients, while recurrent pain at previously irradiated sites may be ineligible for additional radiation due to risks of normal tissue damage. Other alternatives include hormonal therapy, radiopharmaceuticals such as strontium-89, and bisphosphonates. Less often, surgery or chemotherapy may be used for palliation, and intractable pain may require opioid medications. RFA has been investigated as another alternative for palliating pain from bone metastases.

Osteoid osteomas are the most common benign bone tumor, comprising 10–20% of benign and 2–3% of all bone tumors. They are typically seen in children and young adults, with most diagnosed in patients between 5–20 years of age. Osteomas are most common in the lower extremity (usually the long bones, mainly the femur), and less common in the spine. These tumors typically have a characteristic clinical presentation and radiologic appearance, with pain, usually continuous and worse at night, and usually relieved by aspirin or other nonsteroidal anti-inflammatory drugs (NSAIDs). The natural history of the osteoid osteoma varies upon its location, and although they rarely exceed 1.5 cm, may produce bone widening and deformation, limb length inequality, or angular deviations when near a growth plate. When located in the spine, these lesions may lead to painful scoliosis or torticollis. Sometimes, they heal spontaneously after 3–7 years.

Treatment options include medical management with NSAIDs, surgical excision (wide/enbloc excision or curetting), or the use of CT- or MRI-guided minimally invasive procedures including core drill excision, laser photocoagulation, or radiofrequency ablation. For many years, complete surgical excision was the clas-

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sic treatment of osteomas, usually performed in patients with pain despite medical management. Complete surgical excision has several disadvantages. A substantial incision may be necessary and removal of a considerable amount of bone (especially in the neck of the femur), increasing the need for bone grafting and/or internal fixation (which often necessitates a second procedure to remove the metal work). Other possible risks include avascular necrosis of the femoral head and postoperative pathologic fracture. In addition, surgical excision leads to a lengthier period of convalescence and postoperative immobilization. Anatomically inaccessible tumors may not be completely resectable and may recur. RFA of osteoid osteoma is done with a needle puncture, so there is no incision or sutures needed, and patients may walk on the treated extremity immediately and return to daily activities as soon as the anesthetic effect wears off. The risk of recurrence with RFA of an osteoma is 5–10%, and recurrent tumors can be retreated with RFA. In general, RFA is not performed in many spinal osteomas because of possible thermal-related nerve damage.

***Other Radiofrequency Ablation policies for malignancies:

Radiofrequency Ablation of Pulmonary Tumors, policy number MED1249

Radiofrequency Ablation of Renal Cell Cancer, policy number SUR6576

*****Note: This Medical Policy is complex and technical. For questions concerning the technical language and/or specific clinical indications for its use, please consult your physician.**

Evidence Based Guideline for Radiofrequency Ablation of Osteoid Osteomas and Bone Metastases

- Radiofrequency Ablation (RFA) may be appropriate to [palliate](#) pain in patients with osteolytic bone metastases who have failed or are poor candidates for other treatments such as radiation or opioids.
- Radiofrequency Ablation (RFA) may be appropriate to treat osteoid osteomas that cannot be managed successfully with medical treatment.

Medical Evidence regarding Radiofrequency Ablation of Osteoid Osteomas and Bone Metastases indicates it is not recommended in the following situations:

Radiofrequency Ablation (RFA) is not recommended for treatment of osteoid osteomas that can be managed with medical treatment or for initial treatment in patients with painful bony metastases.

Benefits Application

Please refer to certificate for availability of benefit. This guideline relates only to the services or supplies described herein. Benefits may vary according to benefit design; therefore certificate language should be reviewed before applying the terms of the policy.

Billing/Coding/Physician Documentation Information

This policy may apply to the following codes. Inclusion of a code in this section does not guarantee that it

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will be reimbursed. For further information on reimbursement guidelines, please see Administrative Policies on the Blue Cross Blue Shield of North Carolina web site at www.bcbsnc.com. They are listed in the Category Search on the Medical Policy search page.

Applicable codes: 20982

Medical Term Definitions

Palliate

to reduce the severity of; to relieve.

Scientific Background and Reference Sources

BCBSA Medical Policy Reference Manual [Electronic]. 7.01.95, 4/25/2006

Specialty Matched Consultant Panel - 4/2007

BCBSA Medical Policy Reference Manual [Electronic]. 7.01.95, 2/19/2009

Specialty Matched Consultant Panel - 8/2009

Policy Implementation/Update Information

5/21/07 New guideline implemented. (btw)

10/12/09 Specialty Matched Consultant Advisory Panel review 8/28/09. Added the following statement to the "Evidence Based Guideline" section to indicate; "Radiofrequency Ablation (RFA) may be appropriate to treat osteoid osteomas that cannot be managed successfully with medical treatment." Reworded the statement in the "Medical Evidence regarding Radiofrequency Ablation of Osteoid Osteomas and Bone Metastases indicates it is not recommended in the following situations" section; "Radiofrequency Ablation (RFA) is not recommended for treatment of osteoid osteomas that can be managed with medical treatment or for initial treatment in patients with painful bony metastases." Reference added. (btw)

Medical policy is not an authorization, certification, explanation of benefits or a contract. Benefits and eligibility are determined before medical guidelines and payment guidelines are applied. Benefits are determined by the group contract and subscriber certificate that is in effect at the time services are rendered. This document is solely provided for informational purposes only and is based on research of current medical literature and review of common medical practices in the treatment and diagnosis of disease. Medical practices and knowledge are constantly changing and BCBSNC reserves the right to review and revise its medical policies periodically.