

Evidence Based Guideline

Endobronchial Brachytherapy

File Name: endobronchial_brachytherapy
Origination: 1/2010
Last CAP Review: 5/2011
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Last Review: 5/2011

Description of Procedure or Service

Endobronchial brachytherapy is the delivery of radiation therapy directly to endobronchial lesions either intraluminally or interstitially using permanently implanted radioactive seeds or a temporary afterloading implant. The technique permits targeted radiation while minimizing exposure to surrounding radiosensitive structures, such as normal lung, heart, and spinal cord.

Endobronchial brachytherapy has been most investigated as a palliative treatment of obstructing primary or metastatic tumors, particularly in non-small-cell lung cancer (NSCLC). There is also experience using endobronchial brachytherapy as a tool in curative treatment for some primary bronchial and tracheal tumors. Two to four fractions delivered weekly is a typical schedule. The most serious complications described for endobronchial brachytherapy are massive hemoptysis, formation of tracheoesophageal fistulas, bronchospasm, bronchial stenosis, and radiation bronchitis.

In the outpatient setting, the patient receives local anesthesia and monitored sedation. A flexible bronchoscope is passed transnasally; a separate port on the bronchoscope allows passage of the afterloading catheter to the target lesion. Once the catheter is placed, the radioisotope can be administered by the high-dose radiotherapy afterloading machine. Patients with potential airway compromise due to bleeding may require treatment with a rigid bronchoscope, which requires general anesthesia and frequently an overnight stay.

Endobronchial brachytherapy represents one approach to the local treatment of endobronchial lesions. Other technologies include electrocoagulation, cryosurgery, laser resection, endosurgery, and endobronchial stent placement. In some instances, the therapies may be used together, such as using laser therapy for initial debulking followed by brachytherapy.

*****Note: This Evidence Based Guideline 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 Endobronchial Brachytherapy

Endobronchial brachytherapy may be appropriate in the following clinical situations:

- In patients with primary endobronchial tumors who are not otherwise candidates for surgical resection or external-beam radiation therapy due to comorbidities or location of the tumor;
- As a palliative therapy for airway obstruction or severe hemoptysis in patients with primary, metastatic, or recurrent endobronchial tumors.

Endobronchial Brachytherapy

Medical Evidence regarding Endobronchial Brachytherapy indicates it is not recommended in the following situations

Other applications of endobronchial brachytherapy are not recommended. This includes, but is not limited to, its use as a radiation “boost” to curative external-beam radiotherapy, as treatment for asymptomatic recurrences of non-small-cell lung cancer, or in the treatment of hyperplastic granulation tissue.

Rationale

The American College of Radiology (ACR) published ACR Appropriateness Criteria on nonsurgical treatment for NSCLC. These criteria were agreed upon by an expert panel. The panel considers endobronchial brachytherapy a palliative treatment, “providing relief for patients with endobronchial lesions causing obstruction or hemoptysis.”

In the 2009, NCCN practice guidelines for non-small cell lung cancer under surveillance and treatment of recurrences and metastases concluded that relieving airway obstruction may increase both survival and quality of life, especially in severely compromised patients. Brachytherapy is one of the treatments listed for the palliation of symptoms from and treatment of obstructed airways. Brachytherapy is specifically listed as a recommended treatment for severe hemoptysis.

NCCN specifically addresses the use of brachytherapy for patients who have a recurrence of non-small cell lung cancer detected only by positive sputum cytology. The guidelines indicate that after the positive sputum cytology leads to a diagnosis of tumor in situ, brachytherapy is one of the recommended treatment options (repeat bronchoscopy in 3 months is also listed as an option.) Because no supportive studies demonstrating impact on outcomes were identified for this application of endobronchial radiotherapy, this is considered an investigational application under the policy statement.

Benefits Application

This evidence based guideline relates only to the services or supplies described herein. Please refer to the Member's Benefit Booklet for availability of benefits. Member's benefits may vary according to benefit design; therefore member benefit language should be reviewed before applying the terms of this evidence based guideline.

Billing/Coding/Physician Documentation Information

This guideline may apply to the following codes. Inclusion of a code in this section does not guarantee that it 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:31643

Endobronchial brachytherapy is a multistep procedure requiring a series of radiation oncology CPT codes for radiation treatment planning, radiation physics, treatment delivery, and clinical treatment management. CPT codes 77761-77787 describe various types of radiation source application; these codes are used to describe the brachytherapy delivery. In contrast to other types of radiation therapy, endobronchial brachytherapy requires the services of a radiation oncologist and a pulmonologist or other physician to perform the bronchoscopy and insert the catheter.

Previous to the introduction of a specific code, the bronchoscopy component of endobronchial brachytherapy was probably coded with CPT code 31641 or by using CPT codes 77761-77763 with a

Endobronchial Brachytherapy

modifier –62 to indicate the participation of a surgeon/pulmonologist in addition to the radiation oncologist.

Scientific Background and Reference Sources

Rosenzweig KE, Movsas B, Bradley J et al. ACR appropriateness criteria on nonsurgical treatment for non-small cell lung cancer: poor performance status or palliative intent. *J Am Coll Radiol* 2009; 6(2):85-95.

NCCN Clinical Practice Guidelines in Oncology. Non-Small Cell Lung Cancer V.2.2009. Accessible at http://www.nccn.org/professionals/physician_gls/PDF/nscl.pdf.

BCBSA Medical Policy Reference Manual [Electronic Version]. 8.03.11, 10/06/09

Senior Medical Director review 1/2010.

BCBSA Medical Policy Reference Manual [Electronic Version]. 8.03.11, 12/9/2010

BCBSA Medical Policy Reference Manual [Electronic Version]. 8.03.11, 2/10/2011

Specialty Matched Consultant Advisory Panel 5/2011

Policy Implementation/Update Information

- 3/2/2010 New Evidence Based Guideline issued. Endobronchial brachytherapy may be appropriate in the following clinical situations: In patients with primary endobronchial tumors who are not otherwise candidates for surgical resection or external-beam radiation therapy due to comorbidities or location of the tumor; As a palliative therapy for airway obstruction or severe hemoptysis in patients with primary, metastatic, or recurrent endobronchial tumors.
- 6/22/10 Policy Guideline Number(s) removed (amw)
- 6/7/11 Specialty Matched Consultant Advisory Panel review 5/25/2011. Reference added. (lpr)

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