Medical Policy
Cryosurgical Ablation of Primary or Metastatic Liver Tumors

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• Policy: Medicare
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Policy Number: 633
BCBSA Reference Number: 7.01.75
NCD/LCD: NA

Related Policies
• Isolated Limb Perfusion, #124
• Radiofrequency Ablation of Miscellaneous Solid Tumors Excluding Liver Tumors, #259
• Cryosurgical Ablation of Miscellaneous Solid Tumors Other Than Liver, Prostate or Dermatologic Tumors, #260
• Radiofrequency Ablation of Primary or Metastatic Liver Tumors, #286
• Microwave Tumor Ablation, #912
• Transcatheter Arterial Chemoembolization to Treat Primary or Metastatic Liver Malignancies, #634
• Radioembolization for Primary and Metastatic Tumors of the Liver, #292

Policy
Commercial Members: Managed Care (HMO and POS), PPO, and Indemnity
Medicare HMO BlueSM and Medicare PPO BlueSM Members

Cryosurgical ablation of either primary or metastatic tumors in the liver is INVESTIGATIONAL.

Prior Authorization Information
Pre-service approval is required for all inpatient services for all products.
See below for situations where prior authorization may be required or may not be required for outpatient services.
Yes indicates that prior authorization is required.
No indicates that prior authorization is not required.
N/A indicates that this service is primarily performed in an inpatient setting.

<table>
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<th>Outpatient</th>
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<td>Commercial Managed Care (HMO and POS)</td>
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<td>Medicare HMO BlueSM</td>
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<td>Medicare PPO BlueSM</td>
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CPT Codes / HCPCS Codes / ICD Codes

Inclusion or exclusion of a code does not constitute or imply member coverage or provider reimbursement. Please refer to the member’s contract benefits in effect at the time of service to determine coverage or non-coverage as it applies to an individual member.

Providers should report all services using the most up-to-date industry-standard procedure, revenue, and diagnosis codes, including modifiers where applicable.

The following codes are included below for informational purposes only; this is not an all-inclusive list.

The following CPT codes are considered investigational for Commercial Members: Managed Care (HMO and POS), PPO, Indemnity, Medicare HMO Blue and Medicare PPO Blue:

<table>
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<th>CPT codes</th>
<th>Code Description</th>
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<tr>
<td>47371</td>
<td>Laparoscopy, surgical, ablation of 1 or more liver tumor(s); cryosurgical</td>
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<tr>
<td>47381</td>
<td>Ablation, open, 1 or more liver tumor(s); cryosurgical</td>
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<tr>
<td>47383</td>
<td>Ablation, 1 or more liver tumor(s), percutaneous, cryoablation</td>
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Description

Hepatic tumors can be due to primary liver cancer or metastases to the liver from nonhepatic primary tumors. Primary liver cancer can arise from hepatocellular tissue (hepatocellular carcinoma [HCC]) or intrahepatic biliary ducts (cholangiocarcinoma). Multiple tumors metastasize to the liver, but there is particular interest in the treatment of hepatic metastases from colorectal carcinoma (CRC) given the propensity of CRC to metastasize to the liver and the high prevalence of CRC. Liver metastases from neuroendocrine tumors present a unique clinical situation. Neuroendocrine cells produce and secrete a variety of regulatory hormones, or neuropeptides, which include neurotransmitters and growth factors. Overproduction of the specific neuropeptides by cancerous cells causes various symptoms, depending on the hormone produced. Treatment of liver metastases is undertaken to reduce endocrine-related symptoms, in addition to prolonging survival and reducing symptoms related to the hepatic mass.

Surgical resection with tumor-free margins or liver transplantation are the primary treatments available that have curative potential. Many hepatic tumors are unresectable at diagnosis, due either to their anatomic location, size, number of lesions, or underlying liver reserve. Local therapy for hepatic metastasis is indicated only when there is no extrahepatic disease, which rarely occurs for patients with primary cancers other than CRC or certain neuroendocrine malignancies. For liver metastases from CRC, postsurgical adjuvant chemotherapy has been reported to decrease recurrence rates and prolong time to recurrence. Combined systemic and hepatic arterial chemotheraphy may increase disease-free intervals for patients with hepatic metastases from CRC but apparently is not beneficial for those with unresectable HCC.

Various locoregional therapies for unresectable liver tumors have been evaluated: cryosurgical ablation (cryosurgery); radiofrequency ablation; laser ablation; transhepatic arterial embolization, chemoembolization, or radioembolization with yttrium-90 microspheres; microwave coagulation; and percutaneous ethanol injection. Cryosurgical ablation occurs in tissue that has been frozen by at least 3 mechanisms: (1) formation of ice crystals within cells, thereby disrupting membranes and interrupting cellular metabolism among other processes; (2) coagulation of blood, thereby interrupting blood flow to the tissue, in turn causing ischemia and cell death; and (3) induction of apoptosis (cell death).

Recent studies report experience with cryosurgical and other ablative methods used in combination with subtotal resection and/or procedures such as transarterial chemoembolization.
Summary
Cryosurgical ablation involves the freezing of target tissues, most often by inserting into the tumor a probe through which coolant is circulated. Cryosurgical ablation can be performed as an open surgical technique or percutaneously or laparoscopically, typically with ultrasound guidance.

The evidence for the use of cryosurgical ablation in individuals with unresectable primary hepatocellular carcinoma amenable to locoregional therapy includes 1 randomized controlled trial (RCT), several nonrandomized comparative studies, and multiple noncomparative studies. Relevant outcomes are overall survival, disease-specific survival, and treatment-related morbidity and mortality. The single available RCT comparing cryoablation and radiofrequency ablation (RFA) demonstrated lower rates of local tumor progression with cryoablation, but no differences in survival outcomes between groups. Although this study provides suggestive evidence that cryoablation is comparable to RFA, the study has several limitations that suggest findings need to be replicated. Additional comparative evidence is needed to allow conclusions about the effectiveness of cryoablation compared with other locoregional therapies. The evidence is insufficient to determine the effects of the technology on health outcomes.

The evidence for the use of cryosurgical ablation in individuals with unresectable liver metastases from neuroendocrine tumors includes a Cochrane review and case series. Relevant outcomes are overall survival, disease-specific survival, symptoms, and treatment-related morbidity and mortality. The available evidence base is very limited. The evidence is insufficient to determine the effects of the technology on health outcomes.

The evidence for the use of cryosurgical ablation in individuals with unresectable liver metastases from colorectal cancer amenable to locoregional therapy includes 1 RCT, a number of nonrandomized comparative studies and noncomparative studies, and systematic reviews of these studies. Relevant outcomes are overall survival, disease-specific survival, and treatment-related morbidity and mortality. The single available RCT comparing surgical resection with cryoablation was judged to be at high risk of bias. Some nonrandomized comparative studies report improved survival outcomes for patients managed with cryotherapy compared with those managed with resection alone; however, these studies were subject to bias in the selection of patients for treatments. Additional controlled studies are needed to allow conclusions about the effectiveness of cryoablation compared with other locoregional therapies. The evidence is insufficient to determine the effects of the technology on health outcomes.

Policy History

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No changes to policy statements.

10/2008 BCBSA National medical policy review.
No changes to policy statements.

9/2008 BCBSA National medical policy review.
Changes to policy statements.

1/2008 BCBSA National medical policy review.
Changes to policy statements.

Information Pertaining to All Blue Cross Blue Shield Medical Policies
Click on any of the following terms to access the relevant information:
Medical Policy Terms of Use
Managed Care Guidelines
Indemnity/PPO Guidelines
Clinical Exception Process
Medical Technology Assessment Guidelines

References


