Stereotactic Radiosurgery

Effective October 1, 2008

The following protocol contains medical necessity criteria for Stereotactic Radiosurgery services rendered on or after October 1, 2008 for BlueShield of Northeastern New York (BlueShield) contracts. If these criteria are not met, reimbursement will be denied and the patient cannot be billed. Prior approval is not required. Please note that payment for covered services is subject to the limitations noted in the above-referenced contracts and the patient's eligibility at the time the services are rendered.

Description

Stereotactic radiosurgery (SRS) is a method to deliver high doses of ionizing radiation to small intracranial targets. SRS entails delivering highly focused convergent beams in usually a single session so that only the desired target is radiated, sparing adjacent structures. Five main methods of this radiosurgery technology exist: gamma-ray (gamma knife), linear-accelerator (linac), proton-beam, helium-ion, and neutron-beam. The target is localized by computer tomography (CT), cerebral angiography or magnetic resonance imaging (MRI) while the patient wears a stereotactic frame fixed to the skull, which remains in place, during the procedure.

SRS is a multi-step procedure as described below:

1. Attachment of the stereotactic head frame to the patient,
2. Localization of the target,
3. Radiation dose planning,
4. The actual radiosurgery, and
5. Removal of the head frame.

CyberKnife® Image-Guided Radiosurgery System is a stereotactic radiosurgery system that does not require a head frame. It uses an infrared tracking system that recognizes the position of the operative field by simultaneous movement of light-emitting diodes attached to a head-holder or the patient.

Corporate Medical Guideline

Stereotactic radiosurgery may be considered medically appropriate for the following indications:

1. Acoustic neuromas
   a) no impending neurological deficit needing surgical decompression
   b) prior partial or incomplete surgical resection
2. Arteriovenous malformations (AVMs) of the brain
   a) mean diameter <3cm
   b) AVM that is not suitable for surgical resection or embolization for technical or medical reasons
c) proximal aneurysm that can be coiled or embolized pre Gamma Knife

3. Pituitary tumors
   a) reasonable probability of avoiding dose to the optic pathways beyond tolerance
   b) tumor progression or recurrence by MRI or hormonal studies

4. Trigeminal Neuralgia (TIC Douloresux)
   a) typical pain pattern,
   b) CT or MRI since diagnosis, and
   c) refractory to medical trial,

5. Metastatic Brain Tumors
   a) mean single tumor diameter <3.5cm
   b) Karnofsky >60%
   c) survival >3 months

6. Gliomas
   a) diameter <3.5cm
   b) one or more of the following:
      • recurrent tumor
      • residual tumor after surgery
      • tumor progression after radiotherapy

7. Movement Disorders/Tremor
   a) medically refractory tremor (judged by a Movement Disorder Neurologist)
   b) disabling tremor
   c) no dementia, or stable dementia in a setting where tremor control is critical for quality of life
   d) open surgery contraindicated or very high risk:
      • need for anticoagulation
      • medically infirm
      • active pacemaker rendering micro-electrode recording impossible

8. Meningioma
   a) diameter >3.5cm
   b) stable neurologic exam
   c) one or more of the following:
      • Recurrent tumor
      • Residual tumor after surgery
      • Tumor progression after radiotherapy
      • No prior treatment given, but meningioma deemed resectable only with excessive risk

**Investigational** (and therefore **not medically appropriate**) applications of stereotactic radiosurgery include, but are not limited to, the treatment of:

• chronic pain,
• cluster headaches,
• functional disorders (other than cranial nerve neuropathies) including epilepsy,
• obsessive-compulsive neuroses, and
• psychiatric disorders.

Stereotactic radiosurgery is investigational in the treatment of extracranial sites because it is unproven outside the investigation setting.

For explanation of experimental and investigational refer to the Technology Assessment Protocol.

Prior approval is not required. BlueShield fully expects that only appropriate and medically necessary services will be rendered. BlueShield reserves the right to conduct prepayment and postpayment reviews to assess the medical appropriateness of the above-referenced procedures.

References
1. Roswell Park Cancer Institute Gamma Knife Center Treatment Guidelines, 06/26/07.
4. Robert J. Plunkett, M.D., neurosurgeon, Roswell Park Cancer Institute 07/11/06.

Last Review Date
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