Brachytherapy

**What is it?**

CPT Codes – 77750, 77761 – 77763, 77776 – 77778, 77781 – 77784, 77789, 77790, 77799, S2095, S8049

Brachytherapy is a type of radiation therapy in which the radiation device is placed within or close to the target site. In general, any solid tumor that is sufficiently localized may be treated by interstitial brachytherapy. A variety of radioactive isotopes are employed in brachytherapy including lower energy sources usually for permanent implantation as well as higher energy sources which are used for limited periods of time via loading catheters.

The most common methods for delivering brachytherapy are:

- **(77750)** **Infusion** or **Instillation** of radioactive solution to kill cancerous cells. The physician intravenously injects a radioactive substance into a vein or instills it into a body cavity. This type may be referred to as unsealed internal radiation therapy. This code includes three months of follow-up care.

- **(77761 – 77763)** **Intracavitary** application is when the physician inserts encapsulated radioactive elements (e.g., metal seeds, wires, tubes, or needles) into a body cavity (nasal sinus, intraesophageal) or into an organ such as the abdomen using applicators. A radioactive isotope is placed in the applicator. The isotopes are left in place for two to three days, but may be left longer. This method provides radiation to a limited body area while minimizing exposure to normal tissue.

- **(77776 – 77778)** **Interstitial** application is when the physician inserts encapsulated radioactive elements (e.g., metal seeds, wires, tubes, or needles) directly into the affected interstitial tissue spaces (such as brain, breast, chest wall, etc.) using catheters or applicators surgically or percutaneously inserted. A radioactive isotope is placed in the applicator. The isotopes are left in place for two to three days, but may be left longer. Tiny seeds of radioactive material may be inserted directly into the tumor area and left there permanently.

- **(77781 – 77784)** **Remote afterloading high intensity** brachytherapy is when tiny catheters are used together with a single, high intensity radioactive material to produce the desired radiation distribution pattern around the tumor area. Extremely tiny catheters are fixed in place around the tumor and connected to the treatment machine. These catheters, or applicators, usually do not require surgical manipulation to set them in place. Once in position, the machine loads its radioactive source into each catheter, set at predetermined positions along each catheter for previously calculated dwelling times. The radioactive isotopes are left in place for a short period, usually only 3 to 5 minutes, due to the high radioactivity of the source that makes it thousands of times more powerful than normal brachytherapy sources.

- **(77789)** **Surface** application of a radiation source. The physician places the radioactive source sealed in a small holder against a tumor. When surface application is used for treating pterygium (usually referring to a benign growth of the clear membrane that covers the white part of the eye) radioactive seeds are placed into a soft, plastic template, which is inserted into an eye plaque that is implanted during surgery for a specified duration and then removed.

**Criteria**

Brachytherapy is considered medically necessary for any of the following conditions:

1. Head and neck cancers (including lip, mouth, buccal mucosa, naso-pharyngeal, salivary gland, soft palate, tonsillar and esophageal); or,
2. Respiratory and digestive tract cancers (including lung, pleural mesotheliomas,
pelvic recurrence of colorectal, rectal (anal)); or,
3) Genitourinary cancers (including prostate, bladder, urethral, endometrial, cervical and vaginal); or,
4) Eye tumors; or,
5) Brain tumors; or,
6) Soft tissue sarcomas; or,
7) Breast Cancer (such as MammoSite Radiation) following breast conserving surgery when all of the following criteria is met:
   a) Age 45 years or older (or postmenopausal); and,
   b) Cancer is invasive ductal carcinoma or ductal carcinoma in situ; and,
   c) Tumor size is less than or equal to 3 centimeters in size; and,
   d) Microscopic surgical margins of excision are negative; and,
   e) Axillary lymph nodes/sentinel lymph nodes are negative.
8) In-stent restenosis of a native coronary artery using gamma (photon-emitting) radioactive sources or beta radioactive sources; and,
9) In-stent restenosis in grafted coronary vessels (saphenous vein grafts) – limited to brachytherapy using a gamma radiation source.

Brachytherapy is considered experimental and investigational for all other indications, including but not limited to:

- managing initial coronary artery lesions or treating restenosis in native or grafted coronary vessels without stents; or,
- as an alternative to stent placement to reduce the risk of or treat restenosis of native vessels or saphenous vein grafts at an unstented site of a prior percutaneous coronary intervention; or,
- treating in-stent restenosis in saphenous vein bypass grafts using radioactive sources other than those emitting gamma radiation; or,
- treating conditions of the femoropopliteal system (peripheral arterial system); or,
- treatment for breast cancer when:
  a) cancer is inoperable or locally advanced; or,
  b) tumor location is in an area of insufficient tissue; or,
  c) tumor is multifocal, or has extensive nodal involvement or for lobular carcinoma.

Electronic/kilo voltage brachytherapy is considered experimental and investigational for breast cancer and all other indications.

Selective Internal Radiation Therapy (SIRT) (S2095) is considered experimental and investigational using intra-arterial injections of radio-labeled microspheres, such as SirSpheres® or TheraSphere® to treat primary or metastatic liver tumors and for all other indications.

Intra-operative Radiation Therapy (IORT) (S8049) is considered experimental and investigational for all indications. IORT uses applicators and cones that attach to the treatment head of high energy medical linear accelerator designed to direct radiation to defined surface structures. IORT is delivered directly to the tumor when directly visualized during an operation. Evidence does not demonstrate the efficacy of IORT or its safety and effectiveness in improving health outcomes.
to provide the care believed to be in the best interest of the patient, and the provider and patient remain responsible for all treatment decisions.

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