Intraoperative electron beam radiation therapy (IOERT) is a treatment option that delivers a concentrated, precise dose of radiation during surgery, immediately after a tumor is removed. Intraoperative treatments are performed completely in the operating room suite.

The OHSU Knight Cancer Institute is now offering treatment with Mobetron, a mobile electron beam accelerator designed for IOERT. Mobetron is a welcome addition to the multidisciplinary toolbox for physicians caring for patients with locally advanced and recurrent solid tumors. IOERT is performed at the time of a planned surgery.

**Benefits**

- One to two minutes of IOERT can reduce the likelihood of tumor recurrence and increase cure rates.
- It also often lessens the need for post-operative external radiation therapy.
- This approach may allow the treatment team to exclude normal organs and minimize side effects of therapy.

**About the Mobetron system**

The Mobetron system is a mobile, self-shielded electron linear accelerator that safely and quickly delivers IOERT to patients as they are undergoing cancer surgery. The device can deliver a larger radiation dose to the tumor bed because healthy structures can be moved out of the path of radiation.

IOERT does not replace conventional radiation therapy; it is an adjunctive treatment. Because IOERT uses electrons (less penetrating) and not conventional X-rays (more penetrating), the operating room does not have to be outfitted with lead devices.

**Indications for referral**

- Local or regional recurrent or advanced colorectal cancer
- Locally advanced head and neck cancers
- Borderline resectable and locally advanced pancreatic cancer
Benefits to patients

• Treatment in one location: Surgeons and radiation oncologists work together in the operating room
• Can accommodate patients who may not have previously been considered for surgical resection of a tumor
• Targeted radiation treatment given to a tumor or tumor bed during surgery can limit dose to normal tissue, especially key for tumors near critical organs, head, neck and reproductive system
• Lower recurrence rates
• Using electron beams allows for only 2-5 cm penetration
• May shorten length of treatment cycle

Our approach

Our goal is to collaborate with you in the most comprehensive care of your patient. The primary relationship, continuing care and ongoing treatment will remain with you, while radiation therapy during surgery can be managed by OHSU.

We take an integrated team approach to treating GI cancers: Our team evaluates each GI cancer patient at weekly or biweekly scheduled conferences, or tumor boards. Tumor boards involve participation from multiple specialties key to decision-making, including surgical, medical and radiation oncology; pathology; hepatology; interventional radiology; surgery; social services; and dietary and palliative care. During these tumor boards, teams review each case's images and test results, diagnosis and pathology and discuss the best options in a structured way to decide on the optimal treatment for each individual patient.

Our team

About OHSU Knight Cancer Institute

With the latest treatments, technologies and clinical trials, we are the only cancer center in Oregon designated by the National Cancer Institute — an honor earned only by the nation's top cancer centers.

OHSU was the first cancer center in Oregon and SW Washington region to establish an intraoperative radiotherapy program with Intrabeam for breast cancer treatment in 2010. The expanded intraoperative radiotherapy program now includes Mobetron for GI cancers.