

PET and esophageal

Esophageal cancer

Esophageal cancer, a type of gastrointestinal tract malignancy, accounts for six percent of digestive tract cancers and nine percent of deaths. Overall, there are 13,500 new cases of esophageal cancer annually in the U.S. and 11,800 deaths.

Men face a 3:1 risk vs. women for developing esophageal cancer. Key predisposing risks include smoking and substantial alcohol consumption. Dietary carcinogens and presence of other diseases, including head and neck cancers, increase risks for developing esophageal cancer.

Squamous cell tumors are most common, accounting for 98 percent of all esophageal cancer. Mortality exceeds 90 percent with esophageal cancer – more than 75 percent of patients present with mediastinal node or distant metastatic involvement at the time of diagnosis.

The most common patient complaint is difficulty or inability to swallow solids, followed in more advanced stages by liquids. Symptoms are rare until the disease has metastasized. Typical diagnostic studies include physical examination, blood analysis, chest X-ray, esophagoscopy, and biopsy using endoscopy. CT is often used for staging esophageal cancer. Ultrasound may be used to evaluate tumor depth.

Success with surgical and radiation therapy treatments varies widely among institutions, but five-year survival in the U.S. following tumor resection averages 20 percent. Five-year survival with radiotherapy alone averages seven percent. Chemotherapy alone is rarely used. Combination therapy involving post-surgical radiation may reduce local tumor recurrence but has no documented effect on long-term survival. Triple-mode therapy involving surgery, radiation, and chemotherapy increases response, likelihood of remission, and three-year survival rates.

Role of PET

PET is useful in diagnosis or evaluating the extent of disease when other methods are inconclusive. PET allows the assessment of potential metastatic spread or concomitant disease including head and neck cancers. PET may also lead more directly to an accurate diagnosis, avoiding additional procedures.

Reimbursement for PET

PET studies are reimbursable within the Medicare program for diagnosis, staging, and restaging of disease under specific guidelines. Many private insurance carriers also reimburse for these applications of PET.

*Source for cancer facts and figures:
Manual of Clinical Oncology, 4th Edition, Lippincott Williams & Wilkins, 2000.*

Scan protocol:

Dose: 6.6 mCi 18F-FDG inj. i.v.

Patient weight: 50 kg (110 lbs)

Diagnosed with squamous cell cancer

Emission scan: 3 min/bed position

Low dose CT performed for PET attenuation correction and localization (parameters: mAs: 15, kVp: 140)

PET/CT findings:

PET/CT reveals a mandibular lesion.

Relevant articles and papers on esophageal cancer:

1. Yeung H, Macapinlac H, Mazumdar M, Bains M, Finn R, Larson S. FDG-PET in esophageal cancer: incremental value over computed tomography. *Clin Positron Imaging*. 1999;2:255-260.
2. Fukunaga T, Okazumi S, Kiode Y, Isono K, Imazeki K. Evaluation of esophageal cancers using fluorine-18-fluorodeoxyglucose PET. *J Nucl Med*. 1998;39:1002-1007.
3. Kole A, Plukker J, Niewig O, Vaalburg W. Positron emission tomography for staging of gastroesophageal malignancy. *Br J Cancer*. 1998;78:521-527.

