Cancer of the Gastrointestinal Tract

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Esophagus

Cancer of the esophagus accounts for about 2% of all malignant tumors. It is a common cancer in some regions of northern China, as well as the belt that stretches from European Russia, north and east of the Caspian, Turkey, and Iran into central Asia. It is also common among black populations in Southeast Africa. Intermediate rates are found among blacks in the United States [range of age-adjusted incidence rates (AAIR) 12–24 per 100,000], some regions of France (range of AAIR 10–36 per 100,000), and Switzerland (range of AAIR 3–10 per 100,000), and some areas of Latin America (range of AAIR for Brazil 13–26 per 100,000) and Japan (AAIR 6–14 per 100,000).

In areas of very high risk, males and females are similarly affected. In intermediate/low risk areas, there is a clear male predominance.

Increases in mortality for the last 10 years have been reported in the United States for both sexes and for white and black populations. In other countries like the Scandinavian countries and Switzerland, rates have been decreasing.

Etiology

Although many factors have been incriminated (hot food and beverages, spices), none has been proved to be causal, except for smoking and alcohol, especially in Europe and Latin America. The possible role of carcinogens such as nitrosamines has not been demonstrated.

Plummer-Vinson syndrome, lye stricture, achalasia, and hiatus hernia have been considered by some authors as predisposing conditions.

Decrease in exposure to alcohol and tobacco will decrease the incidence of the disease. In China, screening programs have been developed in which cytological samples obtained by an inflatable balloon are evaluated for early neoplastic changes. Results of such programs look promising.

Pathology

The great majority of esophageal cancers are of the epidermoid type. Adenocarcinomas may also be encountered, but in such cases the tumor arises from extension of gastric cancers or it originates from ectopic foci of
gastric mucosa. The tumor develops in the form of exophytic growth or ulcerative lesion. It often extends superficially beneath the mucosa.

**Spread**

The tumor extends first by continuity, infiltrating the mucosa and the submucosa, sometimes far beyond the visible limits of the lesion; local extension occurs rapidly, even deeply in the wall of the viscus, enhanced by the lack of serosal covering. Invasion of important neighboring structures is frequent.

Metastatic spread takes place early, through both the lymphatic system and the blood vessels. Depending on the site of the tumor (upper, middle, or lower portion of the esophagus), there may be jugular, supraclavicular, mediastinal, and even subdiaphragmatic lymph node involvement. Distant metastases to lungs, liver, and bones may occur later.

In a high percentage of cases (up to 50%) lymph node and distant metastases are present at diagnosis.

**Diagnosis**

In almost all cases dysphagia leads to the diagnosis, but unfortunately, it is a late symptom, not developing until there is marked obstruction. As the obstruction progresses, pain and excess salivation usually occur and the inability to eat results in rather rapid weight loss and anemia.

Local growth and invasion of the esophageal wall cause pain, and dysphagia is directly proportional to the obstruction of the lumen of the viscus, whereas sialorrhea is probably due to both vagal reflexes and salivary stasis in the dilated segment of the esophagus proximal to the tumor. When local infiltration progresses, the wall may rupture into adjacent organs, such as bronchi and mediastinum. Symptoms are those related to these severe complications (mediastinitis, aspiration, pneumonia, severe hemorrhage). Clinical examination may reveal lymph node metastases in the neck or signs of mediastinal involvement but the following diagnostic procedures are needed to confirm and document suspected cancer:

- Fluoroscopy and barium swallow (disorders of peristalsis or filling defects, obstruction, enlargement of the mediastinum)
- Endoscopy and accompanying biopsy
- Exfoliative cytology by brush or lavage

Due to the relative frequency of distant metastases at the time of diagnosis, chest X-ray and liver and bone scanning are recommended, together with other optional procedures.

No method of early detection has proved effective in the Western world. However, in Honan, China, a program of esophageal washings has resulted in a very high proportion of early diagnoses and curative resections.