

Stomach Cancer (Gastric Cancer)

Stomach cancer, also known as gastric cancer, is a malignancy that originates in the cells lining the stomach. It is one of the most common cancers worldwide, though its incidence has declined in recent decades in developed countries. Gastric cancer is often diagnosed at advanced stages, which contributes to its relatively poor prognosis. Early detection and management are critical for improving survival rates.

1. Symptoms of Stomach Cancer

The symptoms of stomach cancer often develop gradually and are nonspecific, which makes early diagnosis difficult. Many of the early symptoms are similar to those of other gastrointestinal conditions, such as peptic ulcers, making it challenging to distinguish gastric cancer at the outset.

Common Symptoms:

- Abdominal pain: Often vague and located in the upper abdomen. It may feel like a dull ache or a sense of fullness.
- Indigestion (dyspepsia): Persistent bloating, early satiety (feeling full after eating small amounts of food), or discomfort in the upper abdomen.
- Nausea and vomiting: These symptoms may worsen as the cancer progresses and causes partial or complete obstruction of the stomach.
- Loss of appetite: Often accompanied by weight loss due to a decreased desire to eat.
- Unexplained weight loss: As the cancer advances, unintentional weight loss may occur.
- Difficulty swallowing (dysphagia): Can occur if the tumor obstructs the passage of food through the stomach.
- Blood in the stool or black, tarry stools: A sign of gastrointestinal bleeding, which can occur due to ulceration or tumor growth.
- Jaundice: Yellowing of the skin or eyes may develop if the tumor obstructs the bile duct and affects liver function.
- Fatigue: Due to anemia, malnutrition, or the general effects of cancer.

Advanced Symptoms:

- Ascites: Fluid buildup in the abdomen, causing swelling and discomfort.

- Anemia: Due to chronic blood loss, leading to fatigue, paleness, and shortness of breath.
- Swollen lymph nodes: Particularly in the supraclavicular area (Virchow's node) or the left axillary area (which may indicate metastatic spread).

2. Investigation and Diagnosis of Stomach Cancer

Given the nonspecific nature of early symptoms, diagnostic tests are necessary to confirm the diagnosis and evaluate the extent of the disease.

Clinical Evaluation:

- History and physical examination: A thorough history is taken to assess risk factors, such as family history, smoking, alcohol use, and previous stomach conditions (e.g., gastric ulcers, *Helicobacter pylori* infection, gastritis, or Barrett's esophagus).
- Physical examination: May reveal abdominal tenderness, enlarged liver (hepatomegaly), or enlarged lymph nodes (particularly Virchow's node).

Laboratory Tests:

- Complete preoperative profile.
- Tumor markers: Carcinoembryonic antigen (CEA), CA 19-9, CA 72-4:
- Endoscopy (Upper GI endoscopy): The gold standard for diagnosing gastric cancer. This allows direct visualization of the stomach lining, helping identify tumors, ulcerations, or abnormal growths. Biopsy of any suspicious lesion can be performed during this procedure to confirm malignancy.
- Barium swallow (upper gastrointestinal series): A radiographic study where the patient swallows a contrast material (barium) to outline the stomach. It can help identify structural changes or abnormalities, such as narrowing or ulceration.
- CT scan (contrast-enhanced): A CT scan of the abdomen and pelvis is crucial for staging the cancer, evaluating tumor size, detecting local spread, and assessing the presence of lymph node involvement or distant metastasis (e.g., to the liver or lungs).
- Endoscopic ultrasound (EUS): Provides high-resolution imaging of the stomach wall and surrounding structures. EUS is particularly useful for assessing the depth of tumor invasion (T stage) and involvement of regional lymph nodes (N stage).



- Positron emission tomography (PET) scan: A PET scan can detect metastatic disease, particularly to distant organs like the liver or lungs, by identifying areas of high glucose metabolism associated with cancer cells.

Biopsy and Histopathology:

- Biopsy: Obtained via endoscopy or EUS, a biopsy is crucial for confirming the diagnosis of gastric cancer. Histopathological examination will identify the type and grade of the tumor (e.g., adenocarcinoma, which is the most common type).
- Staging laparoscopy: In certain cases, a laparoscopy may be performed to assess for peritoneal metastasis, especially in patients with advanced disease.

4. Management of Stomach Cancer

The treatment of stomach cancer depends on the stage at diagnosis, the tumor's location, and the patient's overall health. The goal of treatment may be curative, palliative, or supportive.

Surgical Treatment: Advanced Robotic and laparoscopic technique used

1. Gastrectomy: Surgical removal of part or all of the stomach. There are two main types:
 - Partial gastrectomy: Removal of part of the stomach.
 - Total gastrectomy: Removal of the entire stomach, which requires reconstructive surgery (e.g., creating a new stomach with part of the intestine).
2. Lymph node dissection: Lymph nodes in the area around the stomach may also be removed to assess and treat possible cancer spread.
3. Palliative surgery: In cases of advanced cancer, surgery may be used to relieve symptoms (e.g., stenting the stomach to alleviate obstruction).

Chemotherapy:

- Neoadjuvant chemotherapy: Adjuvant chemotherapy: After surgery, chemotherapy may be given to reduce the risk of recurrence.
- Palliative chemotherapy:

Radiation Therapy:

- Adjuvant radiation:

- Palliative radiation: Targeted Therapy:

Immunotherapy:

Immunotherapy helps the body's own immune system recognize and attack stomach cancer cells. It is mainly used in advanced or metastatic stomach cancer, especially in patients whose tumors have specific markers like PD-L1 or MSI-high status. These medicines can slow disease progression and, in some patients, improve survival with fewer side effects than conventional chemotherapy. Immunotherapy is usually given alone or in combination with chemotherapy, based on individual test results and overall health.

Palliative Care:

- Symptom management: For advanced disease, palliative care focuses on improving the quality of life. This includes pain management, nutritional support, and treatment of nausea and vomiting.
- Stent placement: For patients with gastric outlet obstruction, endoscopic stenting can help relieve symptoms and allow for improved feeding.
- Nutritional support: Patients may require a feeding tube or parenteral nutrition if they cannot eat adequately

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