Oral cancer

Squamous carcinoma of the oral cavity is common worldwide . The mortality rate is around 50%.

risk factors: Poor diet, alcohol excess and smoking or tobacco chewing & oncogenic strains of human papillomavirus (HPV-16 and HPV-18) have been identified as responsible for much of the recent increase in incidence, especially in cases affecting the base of tongue, soft palate and tonsils. Oral cancer may present in many ways :

- Solitary ulcer without precipitant, e.g. local trauma
- Solitary white patch ('leukoplakia')
- Solitary red patch
- Fixed lump
- Lip numbness in absence of trauma or infection
- Trismus (painful/difficult mouth opening)
- Cervical lymphadenopathy.

Patients with cancers can be resected. Some patients can be treated with radical radiotherapy alone.

Carcinoma of the oesophagus

aetiological factors

- Smoking
- Alcohol excess
- Chewing betel nuts or tobacco
- Achalasia of the oesophagus
- Coeliac disease
- Post-cricoid web
- Post-caustic stricture
- Tylosis (familial hyperkeratosis of palms and soles)

Squamous cancer can occur in any part of the oesophagus, and almost all tumours in the upper oesophagus are squamous cancers. Adenocarcinomas typically arise in the lower third of the oesophagus from Barrett's oesophagus. Despite modern treatment, the overall 5-year survival of patients presenting with oesophageal cancer is only 13%.

Clinical features:

- progressive, painless dysphagia for solid foods. Others present acutely because of food bolus obstruction.

-In late stages, weight loss is often extreme .

-chest pain or hoarseness suggests mediastinal invasion.

- Fistulation between the oesophagus and the trachea leads to coughing after swallowing, pneumonia .

- Physical signs may be absent but, even at initial presentation, cachexia, cervical lymphadenopathy or other evidence of metastatic spread is common.

Investigations

-OGD with biopsy.

-A barium swallow demonstrates the site and length of the stricture

-Thoracic and abdominal CT& positron emission tomography (CT-PET): should be carried out to identify metastatic spread and local invasion.

- EUS : to determine the depth of penetration of the tumour into the oesophageal wall and to detect locoregional lymph node involvement .

These investigations will define the TNM stage of the disease .

Management

-The treatment of choice is surgery

- Overall survival following'potentially curative' surgery is about 30% at 5 years, but this can be improved by neoadjuvant chemotherapy.

-Although squamous carcinomas are radiosensitive, radiotherapy alone is associated with a 5-year survival of only 5%, but combined chemoradiotherapy for these tumours can achieve 5-year survival rates of 25–30%.

- 70% of patients have extensive disease at presentation; in these, treatment is palliative and should focus on relief of dysphagia and pain.

Gastric carcinoma

Gastric carcinoma is the fourth leading cause of cancer death worldwide . In most countries, the incidence is 50% lower in women. In both sexes, it rises sharply after 50 years of age. The overall prognosis is poor, with less than 30% surviving 5 years,.

Pathophysiology

-Infection with *H. pylori* plays a key pathogenic role. it contribute to the occurrence of gastric cancer in 60–70% of cases .

-Diets rich in salted, smoked foods and the consumption of nitrites and nitrates may increase cancer risk. Diets lacking fresh fruit and vegetables, as well as vitamins C and A, may also contribute.

risk factors

- *H. pylori*
- Smoking
- Alcohol
- Dietary associations
- Autoimmune gastritis (pernicious anaemia)
- Adenomatous gastric polyps
- Previous partial gastrectomy (> 20 yrs)
- Ménétrier's disease
- Hereditary diffuse gastric cancer
- Familial adenomatous polyposis .

-cancer risk is increased 2-3 fold in first-degree relatives of patients, and links with blood group A have been reported. Rarely, gastric cancer may be inherited in an autosomal dominant manner in association with mutations of the *E-cadherin* (*CDH1*) gene.

-Virtually all tumours are adenocarcinomas.

-Cancers are either **'intestinal'**, arising from areas of intestinal metaplasia with histological features of intestinal epithelium, or '**diffuse'**, arising from normal gastric mucosa. Diffuse submucosal infiltration by a scirrhous cancer (linitis plastica) is uncommon

Clinical features

-Early cancer is usually asymptomatic but may be discovered during endoscopy for investigation of dyspepsia.

-2/3 with advanced cancers have weight loss and 50% have ulcer-like pain.

- Anorexia and nausea occur in 1/3 , while early satiety, haematemesis, melaena and dyspepsia alone are less common. Dysphagia occurs in tumours of the gastric cardia which obstruct the gastro-oesophageal junction.

-Anaemia from occult bleeding is also common.

Examination: signs of weight loss, anaemia and a palpable epigastric mass are not infrequent. Jaundice or ascites signify metastatic spread. Occasionally, tumour spread occurs to the supraclavicular lymph nodes (Troisier's sign), umbilicus (Sister

Joseph's nodule) or ovaries (Krukenberg tumour). Paraneoplastic phenomena, such as acanthosis nigricans,thrombophlebitis (Trousseau's sign). Metastases arise most commonly in the liver, lungs, peritoneum and bone marrow.

Investigations

1-OGD is the investigation of choice and should be performed in any dyspeptic patient with 'alarm features':

- Weight loss
- Anaemia
- Vomiting
- Haematemesis and/or melaena
- Dysphagia
- Palpable abdominal mass

2-Barium meal is a poor alternative .

3-CT is necessary for staging and assessment of resectability.

4-laparoscopy with peritoneal washings determine whether the tumour is resectable, as it is the only modality that will reliably detect peritoneal spread.

Management

Surgery

- cure, and this can be achieved in about 90% of patients with early gastric cancer.

-Proximal tumours involving the oesophago-gastric junction also require a distal oesophagectomy.

- Small, distally sited tumours can be managed by a partial gastrectomy with lymphadenectomy .

-Following surgery, recurrence is much more likely if serosal penetration has occurred, although complete removal of all macroscopic tumour combined with lymphadenectomy will achieve a 50–60% 5-year survival.

Recent evidence suggests that perioperative chemotherapy with epirubicin, cisplatin and fluorouracil ECF) improves survival rates.

Gastric lymphoma

less than 5% of all gastric malignancies. The stomach is the most common site for extranodal non-Hodgkin lymphoma and 60% of all primary gastrointestinal lymphomas occur at this site.

Lymphoid tissue is not found in the normal stomach but lymphoid aggregates develop in the presence of *H. pylori* infection. Indeed, *H. pylori* infection is closely associated with the development of a lowgrade lymphoma (classified as marginal zone lymphomas of MALT type).

Invex: EUS plays an important role in staging these lesions assess depth of invasion into the gastric wall.

The clinical presentation is similar to that of gastric cancer, and endoscopically the tumour appears as a or ulcerating mass. While initial treatment of low-grade lesions confined to the superficial layers of the gastric wall consists of *H. pylori* eradication and close observation, 25% contain t(11 : 18) chromosomal translocations. In these cases, additional radiotherapy or chemotherapy is usually necessary.

Polyps and polyposis syndromes

Polyps may be neoplastic or non-neoplastic. The latter include hamartomas, metaplastic ('hyperplastic') polyps and inflammatory polyps. These have no malignant potential.

. Colorectal adenomas prevalence rises with age; 50% of people over 60 years of age have adenomas, and in half of these the polyps are multiple. They are more common in the rectum and distal colon .Nearly all forms of colorectal carcinoma develop from adenomatous polyps. Features associated with a higher risk of malignancy are :

- Large size (> 2 cm)
- Multiple polyps
- Villous architecture
- Dysplasia

Adenomas are usually asymptomatic and discovered incidentally ,Or bleeding and anaemia. .. Once all polyps have been removed, surveillance colonoscopy should be undertaken at 3–5-year intervals, as new polyps develop in 50% of patients.

Familial adenomatous polyposis

-Familial adenomatous polyposis (FAP) is an uncommon autosomal dominant disorder accounting for 1% of all colorectal cancers. It results from germline mutation of the tumour suppressor *APC* gene. 20% of cases arise as new mutations and have no family history.

-cancer will develop within 10–15 years of the appearance of adenomas and 90% of patients will develop colorectal cancer by the age of 50 years. Despite surveillance, approximately 1 in 4 patients with FAP have cancer by the time they undergo colectomy.

- Non-neoplastic cystic fundic gland polyps occur in the stomach but adenomatous polyps also occur uncommonly. Duodenal adenomas occur in over 90% and are most common around the ampulla of Vater. Malignant transformation to adenocarcinoma occurs in 10% and is the leading cause of death in those who have had prophylactic colectomy.

- sometimes respond to hormonal therapy with tamoxifen, and the NSAID sulindac may lead to regression in some, by unknown mechanisms.

-Subsequently, all first-degree relatives should also undergo testing. In families with known FAP, family members should undergo mutation testing at 13–14 years of age and patients who are found to have the mutation should be offered colectomy after school or college education has been completed. The operation of choice is total proctocolectomy with ileal pouch–anal anastomosis. Periodic upper gastrointestinal endoscopy every 1–3 years is recommended to detect and monitor duodenal and periampullary adenomas.

Colorectal cancer

condition becomes increasingly common over the age of 50 years.

Pathophysiology

Both environmental and genetic factors are important in colorectal carcinogenesis. Dietary factors are most important .other risk factors are:

Medical conditions

- Colorectal adenomas
- Long-standing extensive ulcerative colitis or Crohn's colitis
- Ureterosigmoidostomy
- Acromegaly
- Pelvic radiotherapy

Others

• Obesity and sedentary lifestyle – may be related to diet
• Smoking
• Alcohol (weak association)
• Cholecystectomy (effect of bile acids in right colon)
• Type 2 diabetes (hyperinsulinaemia)
• Use of aspirin or NSAIDs (COX-2 inhibition) and statins associated with *reduced* risk.

-About 5–10% of colon cancers are caused by hereditary non-polyposis colon cancer (HNPCC). this disorder have an autosomal dominant mode of inheritance and a positive family history of colon cancer occurring at a young age. Most tumors arise from malignant transformation of a benign adenomatous polyp. Over 65% occur in the rectosigmoid and a further 15% recur in the caecum or ascending colon. Spread occurs through the bowel wall. Rectal cancers may invade the pelvic viscera . Lymphatic invasion is common at presentation, metastasis spread through both portal and systemic circulations to reach the liver and, less commonly, the lungs.

Clinical features

-In tumours of the left colon, fresh rectal bleeding is common and obstruction occurs early. Tumours of the right colon present with anaemia from occult bleeding or with altered bowel habit, but obstruction is a late feature.

Colicky lower abdominal pain is present in 2/3 of patients and rectal bleeding occurs in 50%. A minority present with features of either obstruction or perforation, leading to peritonitis, localised abscess or fistula formation. Carcinoma of the rectum usually causes early bleeding, mucus discharge or a feeling of incomplete emptying.

Between 10 and 20% of patients present with iron deficiency anaemia or weight loss.

On examination, there may be a palpable mass, signs of anaemia or hepatomegaly from metastases. Low rectal tumours may be palpable on digital examination.

Investigations

1-Colonoscopy is sensitive and specific than barium enema

2- Patients in whom colonoscopy is incomplete and those who are at high risk of complications can be investigated by CT colonography .This is a sensitive and non-invasive technique for diagnosing tumours and polyps of more than 6 mm diameter.

3-carcinoembryonic antigen (CEA) levels are of limited value in diagnosis, CEA testing can be helpful during follow-up to monitor for the presence of recurrence.

Management

Surgery:

locally advanced rectal cancer should be offered neoadjuvant radiotherapy or chemoradiotherapy to increase the subsequent chance of a complete surgical resection.

Carcinomas within 2 cm of the anal verge may require abdominoperineal resection and formation of a colostomy. Post-operatively, patients should undergo colonoscopy after 6–12 months and then at 5 years to search for local recurrence or development of new lesions, which occur in 6% of cases..

Prevention and screening : Secondary prevention aims to detect and remove lesions at an early or pre-malignant stage.

1• people over the age of 50 years screened by regular *faecal occult blood (FOB) testing* reduces colorectal cancer mortality

2• *Colonoscopy* remains the gold standard but is expensive and carries risks.

3• *Flexible sigmoidoscopy* is an alternative option and has been shown to reduce overall colorectal cancer mortality by approximately 35% (70% for cases arising in the rectosigmoid).