Gastrointestinal tract pathology 2022-2023

Familial syndromes

(A) Familial adenomatous polyposis coli (FAP)

- Autosomal dominant disease, it is caused by genetic defect is in the APC gene.
- A minimum number of 100 adenomas are required for diagnosis.
- It is evident in adolescence or early adulthood.
- The risk of colonic cancer is 100% by midlife unless a prophylactic colectomy is performed.

(B) Peutz- Jegher's syndrome

- Rare Autosomal dominant polyps
- Characterized by pigmentation around the mouth and oral cavity with multiple polyps in the small intestine.
- Rarely undergo malignant transformation.

Neoplasms of the small intestines

Uncommon compared to tumors in other segments of GI tract

Benign:
-Adenomas
-Leiomyomas
-Lipomas
-Angiomas

Malignant
-Adenocarcinoma
-Primary lymphoma
-Carcinoid
-GIST

Carcinoid tumor

It is a tumor of neuroendocrine cells.
It is a low grade malignant tumor.
Commonest sites: appendix, colon, esophagus, stomach, jejunum, ileum.

Morphological features

Gross: appear as small, yellowish, brown nodules.
Histologically: nests of tumor cells are arranged as islands, trabeculae, or sheets of uniform polyhedral cells, with scant pink granular cytoplasm and round-to-oval nuclei with salt and pepper chromatin.

- These tumors secrete vasoactive substances into the circulation.
- When there is liver metastasis **carcinoid syndrome** is developed (flushing of face, sweating, diarrhea, bronchospasm, cardiac valve stenosis).

Gastrointestinal Stromal Tumor (GIST)

- Uncommon arise in wall of bowel, protrude into lumen--- ulcerate--- GI bleeding.
- Commonest site: stomach
- Mostly slow growing; cured by surgery

Histologically: 3 morphological types spindle (most common), epithelioid and mix.

Colorectal carcinoma

- ✓ Most common malignancy of the GI tract and is a major cause of morbidity and mortality worldwide.
- ✓ Peak incidence for colorectal carcinoma is 60-70 years of age.
- ✓ Males are affected more than females.

Etiology and pathogenesis: -

Premalignant lesions

- Adenomatous polyps.
- Inflammatory bowel diseases.

Genetic factors

- Familial adenomatous polyposis (FAP) 100% risk.

- Microsatellite instability pathway, which is associated with defects in DNA mismatch repair gene.

Environmental factors especially dietary factors

- High fat and high CHO diets.
- Low fibers in diets.
- Several recent studies suggest that use of aspirin and other NSAIDs exerts a protective effect against colon cancer.

Gross feature:

- ❖ Tumors of **proximal (right) colon** appear as exophytic, polypoid masses in the ascending colon and cecum.
- May ulcerate ----occult bleeding ------ iron deficiency anemia.
- Obstruction uncommon.
  - ❖ In **distal part (left)** presented as annular, encircling lesions ------ produce so called napkin-ring constriction and narrowing of the lumen---- intestinal obstruction or ulceration causing rectal bleeding.

Histological features:

- Adenocarcinoma that ranges from well differentiated to undifferentiated, frankly anaplastic tumors.
- Many tumors produce mucin (mucoid adenocarcinoma) and this worsen the prognosis.
- Sometimes signet ring carcinoma as in gastric carcinoma.
  - ✓ The two most important prognostic factors are depth of invasion and the presence or absence of lymph node metastases.
- Invasion into the muscularis propria confers significantly reduced survival that is decreased further by the presence of lymph node metastases

Malignant Tumors of anal canal

Adenocarcinoma
Squamous cell carcinoma
Malignant melanoma

THE APPENDIX

Is a finger like tube connected to the cecum that is prone to acute and chronic inflammation

Acute Appendicitis

- ✓ Initiated by progressive increases in intraluminal pressure that compromise venous outflow.
- ✓ Obstruction is the primary event mostly by fecaliths.
- ✓ Other causes include tumor, ischemic injury, viral infection or infestation with *Enterobius vermicularis*.

Clinically:

- Abdominal pain, start on periumbilical area then shifted to the right iliac fossa.
- Nausea, vomiting and mild fever.
- Classic sign of rebound tenderness.

Grossly:

Vary according to severity and duration; Edema, congestion, suppuration, perforation and gangrene.

Microscopically:

- Transmural infiltration of neutrophils with ulceration of lining mucosa.
- In more severe cases, focal abscess may form (**acute suppurative appendicitis**) and that may progress to large area of hemorrhagic ulceration and gangrenous necrosis (**acute gangrenous appendicitis**).

Complications:

1. Gangrene
2. Perforation----peritonitis
3. Periappendicular abscess

Commonest tumor of appendix is **carcinoid tumor**.