Small bowel tumours

- Only 1 to 2 per cent of malignant alimentary **tumours**.
- Equal between man and women
- 100 times less frequent than in the stomach, oesophagus, or colorectum
- Benign lesions are more common distal, while Adenocarcinoma is more common proximal.

- Small intestinal tumors may originate in cells of the:
  - epithelium
    - adenomas,
    - adenocarcinomas or
    - carcinoids
  - lymphatic tissues
    - lymphomas
  - mesenchymal or neural elements
    - gastrointestinal stromal tumors
    - leiomyomas
    - lipomas
    - hemangiomas
    - neuromas
    - sarcomas

Risk factors

- Familial adenomatous polyposis,
- Hereditary nonpolyposis colorectal cancer (HNPCC),
- Peutz-Jeghers syndrome,
- Crohn's disease,
- Gluten-sensitive enteropathy (celiac sprue),
- Biliary diversion (e.g., previous cholecystectomy).

Presentation

- Sixth and seventh decades of life
- Benign **tumours** are found *incidentally* at laparotomy or autopsy
  - vague symptoms, absence of clinical signs, the difficulty in investigating much of the **small bowel**
  - nausea, dyspepsia, epigastric discomfort, fatigue, bloating and weight loss, to haemorrhage or obstruction
  - Haemorrhage: occult or major bleeding ..
  - palpable abdominal mass, perforation, fistula formation, intussusception or intraperitoneal haemorrhage

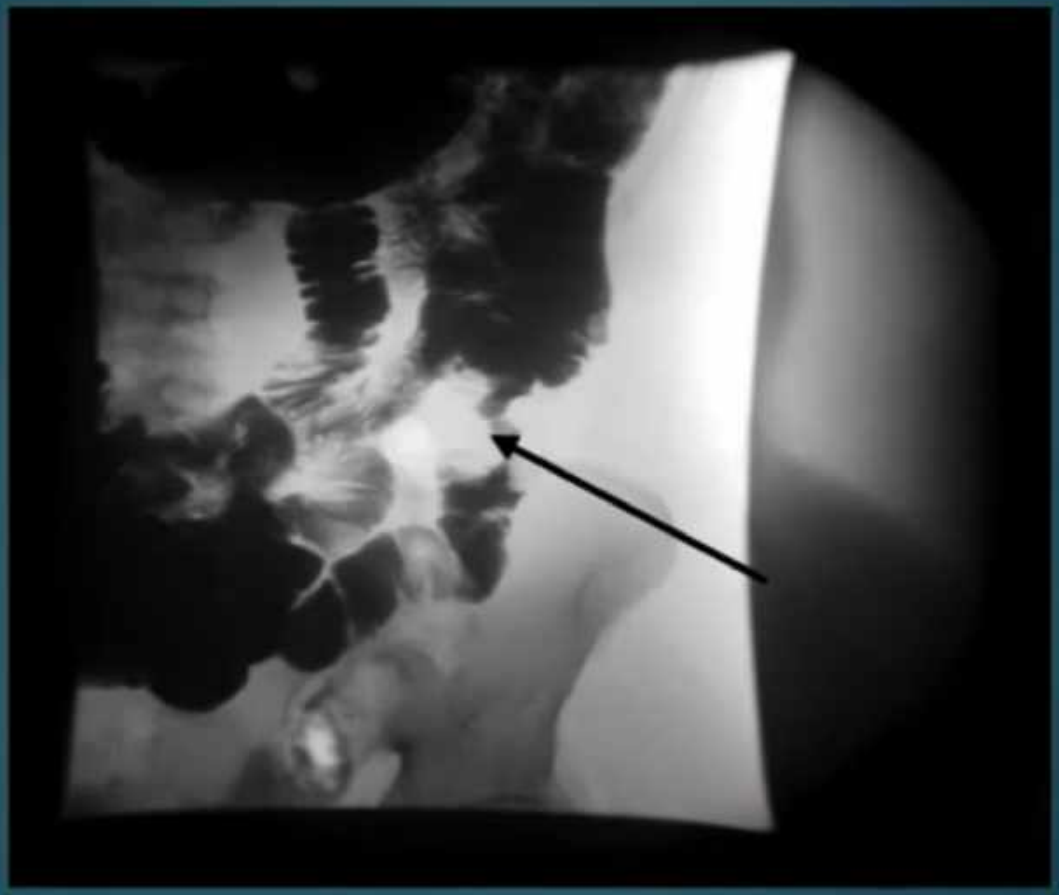
CLINICAL PRESENTATION OF PRIMARY SMALL BOWEL TUMORS

Signs and symptoms	Frequency (%)
BENIGN NEOPLASMS	
Asymptomatic	47–60
Abdominal pain	24–50
Acute gastrointestinal hemorrhage	29–44
Anemia	28–58
Intermittent obstruction	12–28
MALIGNANT NEOPLASMS	
Asymptomatic	6–12
Abdominal pain	62–83
Weight loss	38–55
Nausea/vomiting	23–64
Acute gastrointestinal hemorrhage	6–31
Anemia	12–38
Abdominal mass	5–32

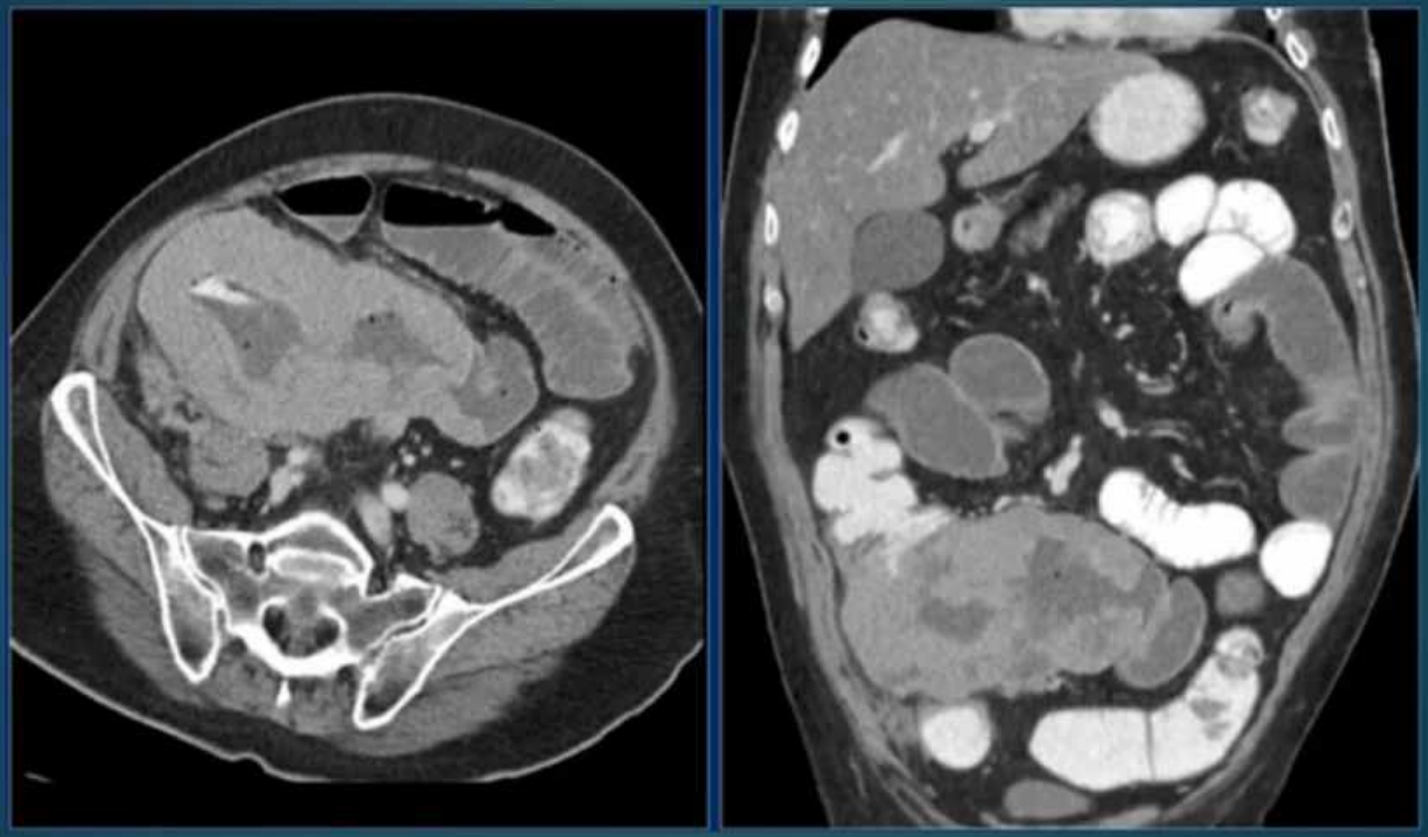
Investigation

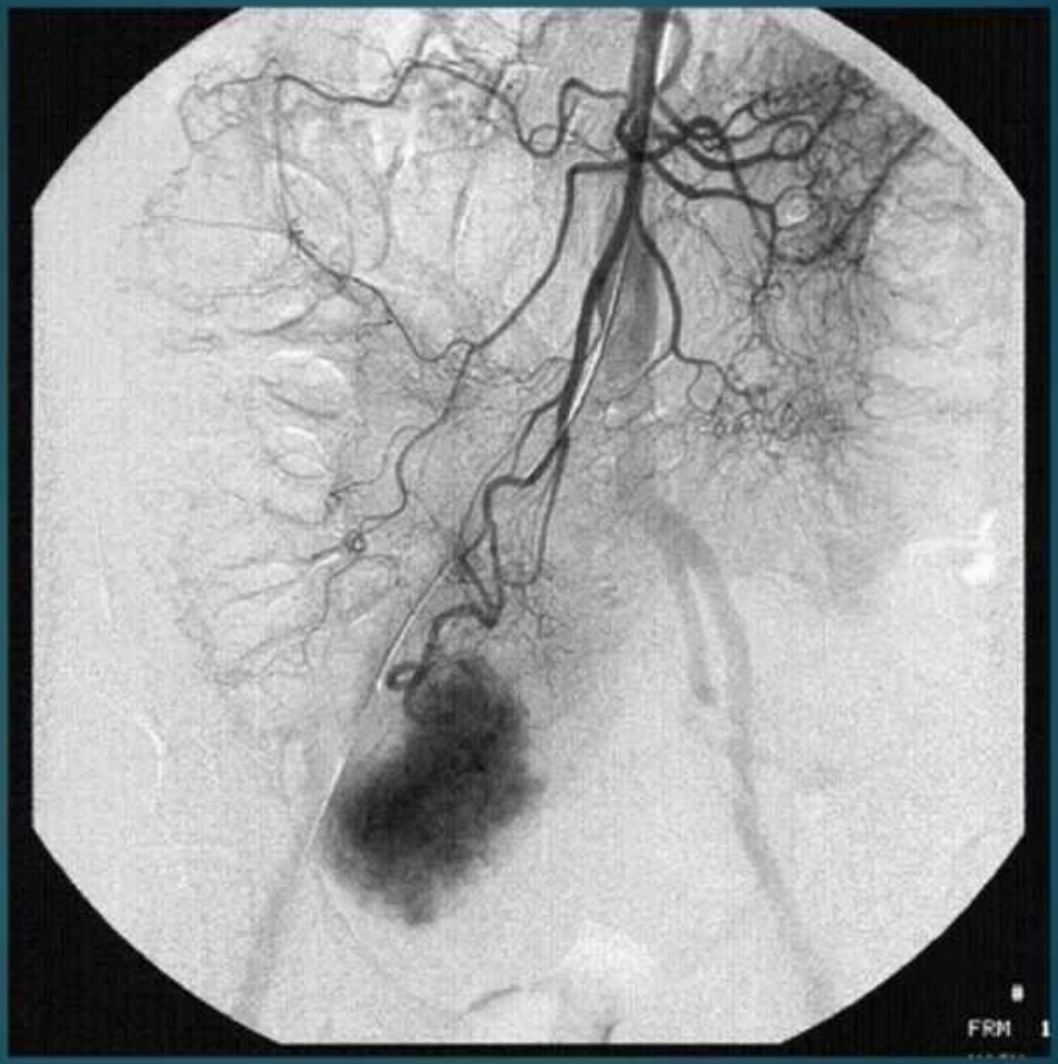
- Contrast Studies : small bowel follow through
- Endoscopy
- CT / MRI
- Angiography
- Capsule endoscopy

small bowel follow through



CT entorography

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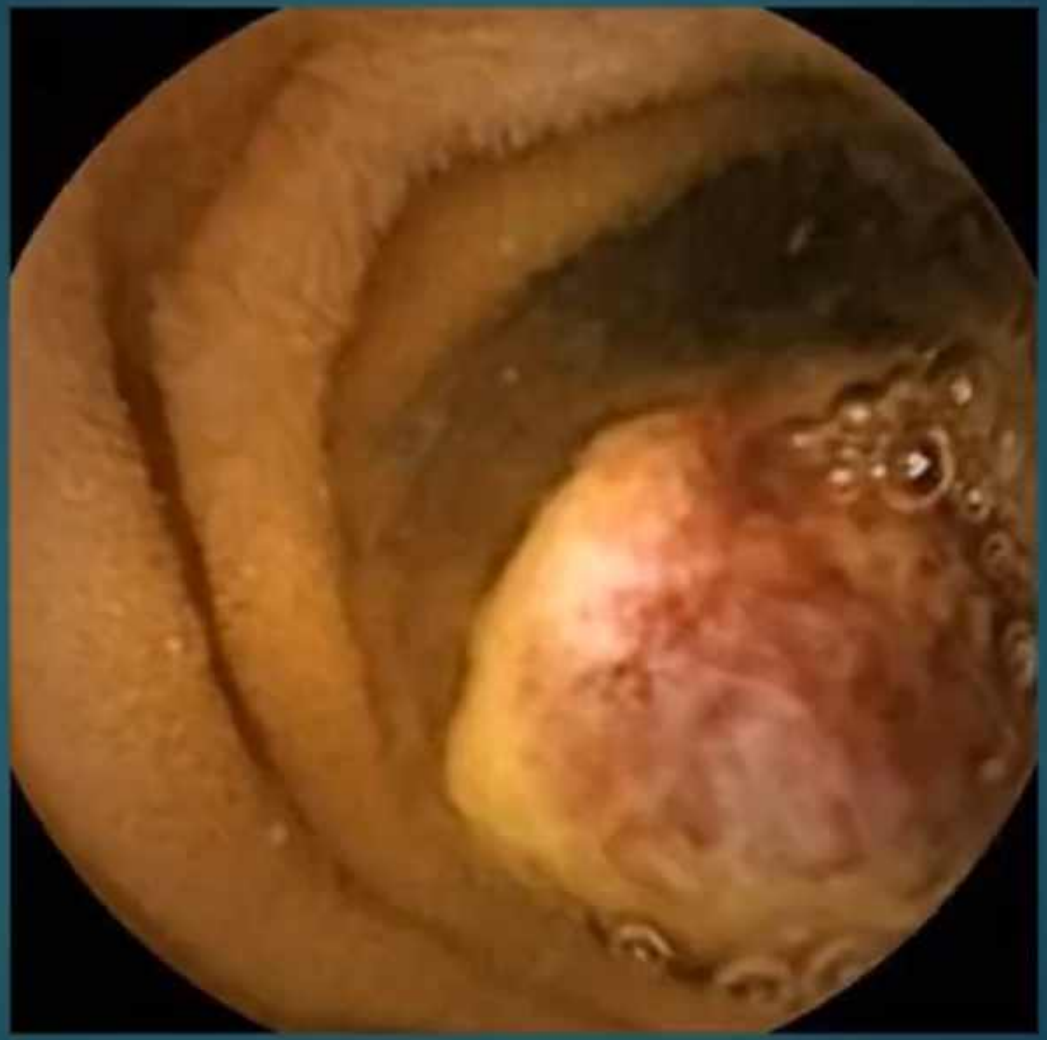

Pathological classification

- Not straightforward
  - ***Benign neoplasms***
  - ***Malignant Tumours***

Adenoma

- True adenoma, Villous adenoma and Brunner gland adenoma.
- 20% in doudenum, 30 % in jejunum and 50% in ileum.
- Villous adenomas more common in Duodenum and less common in distal small bowel.
- Most common presentation is asymptomatic ,Abdominal pain, obstruction, and occult (or overt) haemorrhage Obstructive jaundice.
- Malignant change increases with the size, site, and number of lesions as well as with the histological type (**tumours** situated in the periampullary region are more prone to malignancy)


C W

Familial Polyposis syndromes

- Familial polyposis coli
- Autosomal-dominant inheritance of the mutated *APC* gene
- Thousands of adenomas in the colorectum
- polyps occur within the **small** intestine in 24 to 93 per cent
- only 2 to 12 per cent develop duodenal cancer
- Treatment : excise polyps / biopsy / follow up

Other Benign neoplasms

- **Brunner's gland adenoma (doudenum)**
- **Lipoma**
- Neurofibromas
- **Fibroma**
- **Vascular tumours**
- **Leiomyoma**

Malignant Tumours of Small Intestine

- Malignant neoplasms almost always produce symptoms
- The most common :pain and weight loss
  - Obstruction in 15- 35% of patients (adhesions and infiltration)
  - Diarrhoea and excess mucus
  - GI bleeding , anaemia

Carcinoid tumours

- Originate in enterochromaffin cells (*argentaffin cells)*
- 0.7 per 100 000
- These **tumours** may occur in the
  - foregut (including the duodenum),
  - midgut (including the jejunoileum),
  - the hind gut.
- Midgut carcinoids characteristically secrete large amounts of 5-hydroxytryptamine (**5-HT**; serotonin), whereas foregut carcinoids secrete **small** amounts of this peptide

Carcinoid tumours cont.

- Most common in ileum (last two feet)
- Multi-centric in 30 – 40 % of cases
- yellow in colour and appear in a submucosal or serosal position
- slow-growing **tumours**
- fifth decade, and both sexes are affected equally.
- Most common presentation is pain.
- Most patients will have metastasized to LN / Liver
- Doudenal carcinoid can cause ulceration, obstruction, and jaundice

Carcinoid **tumours** malignant potential

- Metastasis is related to size of tumor,
  - Less than 1cm tumor : 20 – 30 % risk of mets to LN and liver
  - 1–2 cm tumor: 60-80% LN and 20% Liver
  - More than 2cm : 80% LN and 40-50% liver
- Lesion less then 1cm can be adequately treated with local excision.
- Small bowel obstruction, mesenteric fibrosis and ischaemia.

Carcinoid syndrome.

- Carcinoid syndrome refers to vasomotor, gastrointestinal, and cardiac manifestations induced by systemic circulation of a variety of peptides elaborated by carcinoid tumor
  - *Diarrhoea, flushing ,wheezes, abdominal cramps , cardiac (Rt heart failure)*
  - *Most likely liver metastases or large tumor bypass the liver*
- Elevated urinary levels of 5-HIAA measured over 24 hours with high-performance liquid chromatography are highly specific but not sensitive

Carcinoid Tumours *Cont.*

- Treatment
- Local disease : resection including draining Lymph nodes
- Metastatic disease:
  - Tumour debulking, resection, cryotherapy, radiofrequency ablation, hepatic artery embolization, or chemoembolization.
- Systemic therapy
  - Somatostatin analogs. Octeriotide, Long-acting octreotide, lanreotide.
- Cytotoxic chemotherapy: ineffective.

Adenocarcinoma

- Adenocarcinoma accounts for about 35% of **small bowel tumors**
- More common in proximal small bowel than distal.
- median age at presentation of 60 years
- Presentation according to site:
  - Non-specific, vomiting, pain , jaundice, obstruction, perforation.
- Jejunal and ileal **tumours** are best treated by segmental resection including the regional lymph nodes
- The overall 5-year survival rate for jejunoileal carcinomas is 20 to 30 per cent. If there is no nodal involvement at operation, survival is increased to 50 to 70 per cent
- Chemotherapy is of little help.

Adenocarcinoma cont.

- Adenocarcinoma developing with **crohn's disease** is more common in Ileum
- 20 years younger
- male preponderance of about 70 per cent
- prognosis is very poor

Gastrointestinal lymphoma

- 1 to 4 per cent of all primary gastrointestinal cancers
- 50 to 55 per cent of **tumours** occur in the stomach, 30 to 32 per cent in the **small bowel**
- Present with; obstruction, bleeding , anorexia and weight loss .
- 5th and 6th decade
- Most common in ileum
- Increase incidence in patients with Coeliac disease / immunodeficiency states (e.g., AIDS).
  - Worsening diarrhea, pyrexia, and local obstructive symptoms.
- Treatment is usually medical unless surgical complication.

Gastrointestinal Stromal Tumours (GIST)

- Arise from Connective tissue cells
- Most common mesenchymal tumour of the GI Tract.
- Benign or malignant. Size increase risk of malignant potential.
- Usually stomach followed by small bowel (jejunum >ileum)
- 50-70 years of age.

GIST *cont.*

- Lymphatic spread is not common
- Metastasis to liver or peritoneum

- Prognosis
  - Worse than in stomach and oesphagus
  - Tumour size : less than 2 cm diameter → low risk
  - Mitotic rate: less than 5 HPF → low risk

- Treatment
  - Surgery . Excision with negative margin
  - Tyronise kinase inhibitor (imatinib) in advanced cases 50% tumours shrinkage.
  - Radio-resistant

End of notes