Colorectal Cancer
MDT coordinators Conference

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Overview

- **Epidemiology of colorectal cancer**
- **Anatomy & physiology**
- **Adenoma carcinoma sequence**
- **Tumour diagnosis & staging**
- **Treatment of early colorectal cancer**
- **Treatment of late colorectal cancer**
- **Role of chemo & radiotherapy**

- **Risk reduction strategies**
- **Screening / Public awareness**

Epidemiology of bowel cancer

- Second commonest cause of cancer death
- 19,000 per year
- Life time risk 1 in 30
- 50% 5 year survival

Epidemiology of bowel cancer

Risk Factors

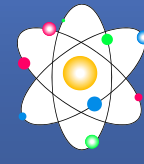
- Colitis 1%
- FAP 1%
- HNPCC 2%
- Family history 15-20%

- Western disease
- Rapidly transmitted to immigrant population

Adenoma Carcinoma Sequence

Normal epithelium → Dysplastic crypts → Tubular adenoma → Villous adenoma → Invasive malignancy

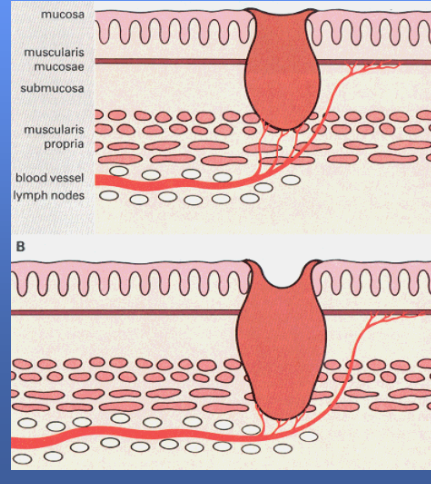
APC *K-ras* *DCC* *NF1GAP* *P53* *NM23*



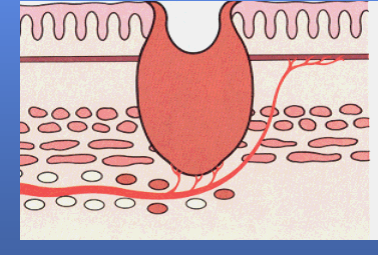
Dukes' staging

A

B

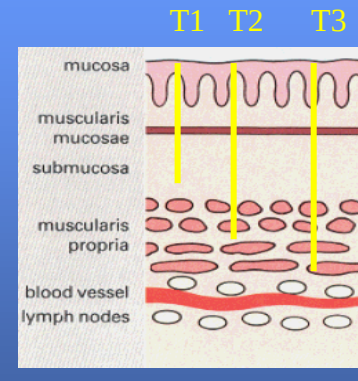


C



T Staging

- T1-lesion: Into muscularis mucosae
- T2-lesion: Into muscularis propria
- T3-lesion: Through muscularis propria
- T4-lesion: Invading vagina/prostate/bladder

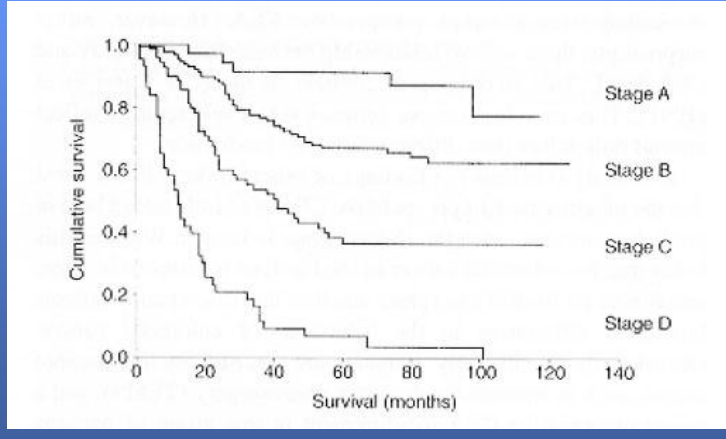


TNM

- N0 no nodes
- N1 local nodes up to 4
- N2 apical node, or more than 4
- N3 nodes beyond resection

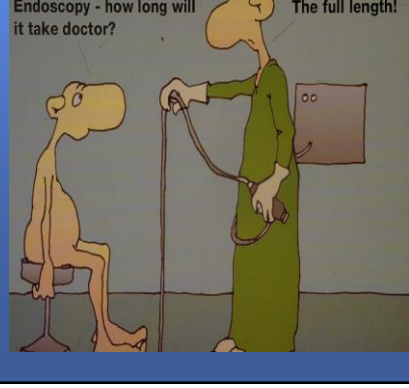
- M0 no metastases
- M1 metastases

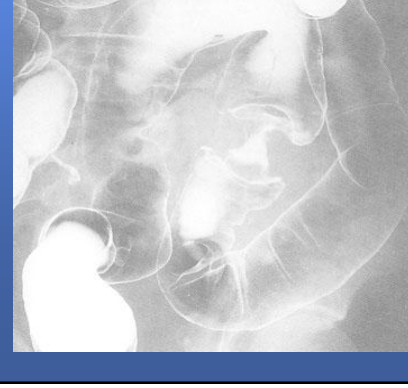
Dukes' stage 5 year survival



Diagnosis and staging

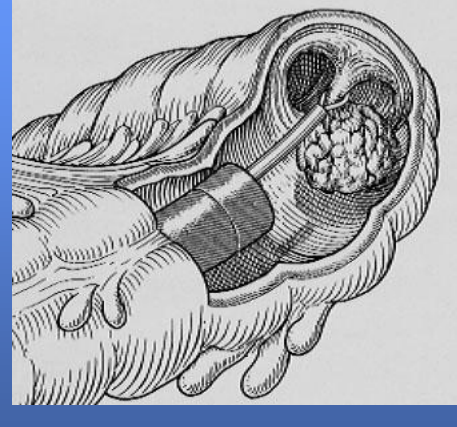
- Contrast studies
- Endoscopy
- CT – whole body
- CEA
- Biopsy
- PET





Treatment of early colo-rectal cancer

Endoscopic snaring of lesions



Haggitt classification

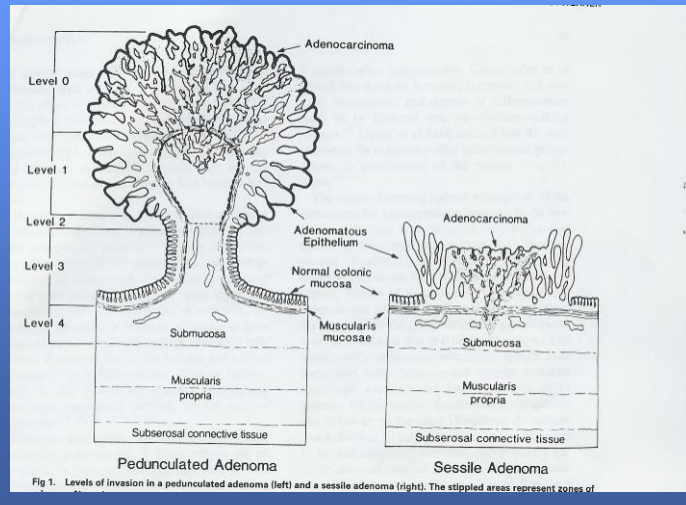


Fig 1. Levels of invasion in a pedunculated adenoma (left) and a sessile adenoma (right). The stippled areas represent zones of

Kudo's classification

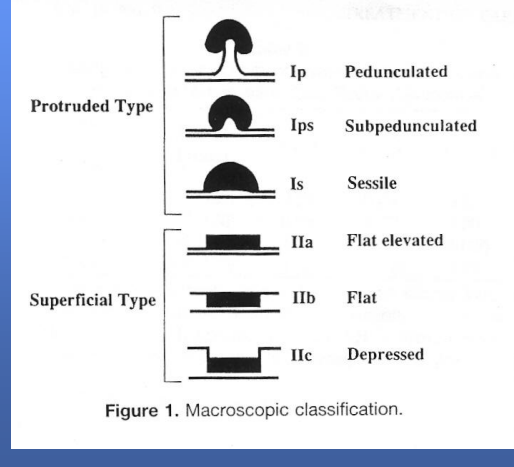
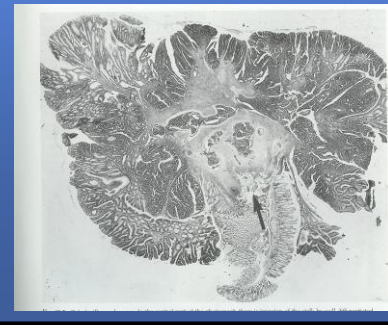


Figure 1. Macroscopic classification.

SM criteria (T1)

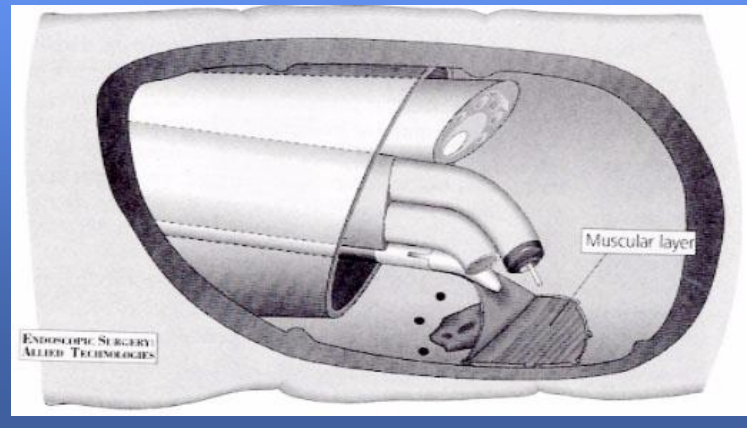
- Sm1 invasion of MM to 2-300 um
- Sm2 intermediate invasion
- Sm3 invasion near inner surface of MP



Histology

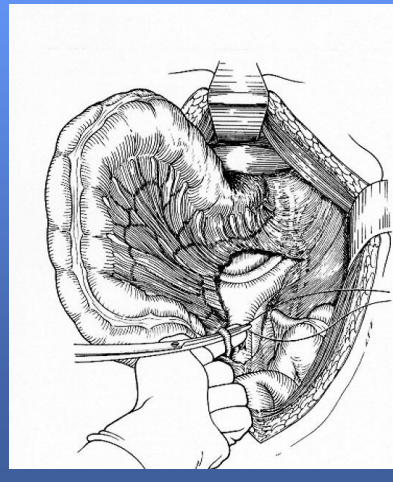
- Tubular adenoma high grade dysplasia
- Mod diff . Adenocarcinoma into sub mucosa (pT1)
- Appears completely excised
- ?vascular invasion

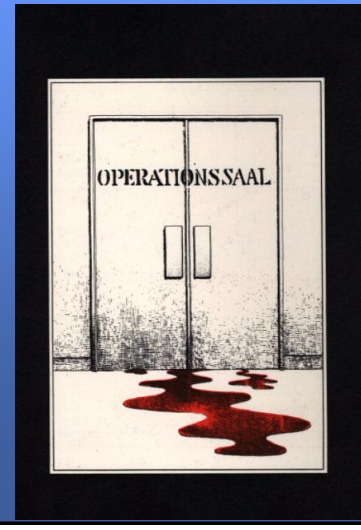
Trans anal endoscopic microsurgery TEMS



Trans anal endoscopic microsurgery TEMS

Treatment of late colo-rectal cancer





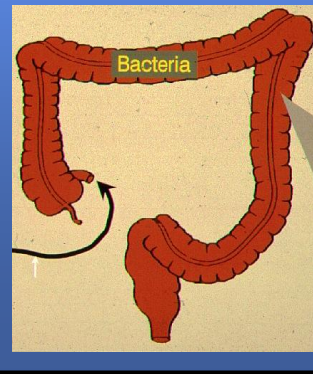
Clinical features

- Rectal bleeding
- Change in bowel habit
- Abdominal pain

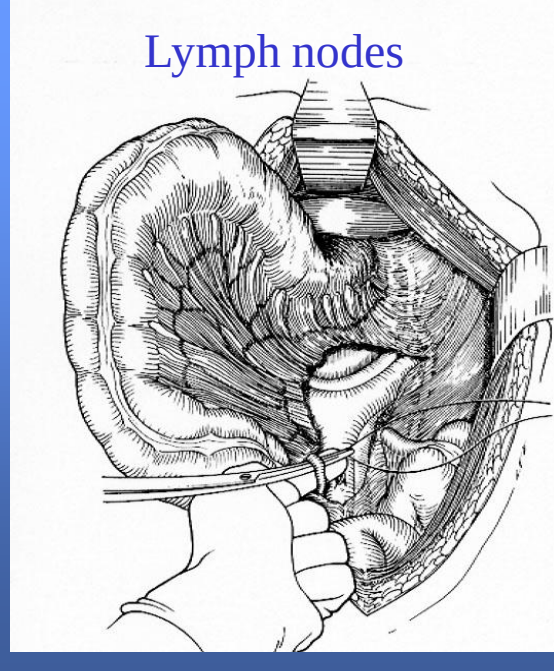
- Abdominal mass
- Rectal mass
- Anaemia

Colon resections

- Right hemicolectomy
- Left hemicolectomy/sigmoid colectomy



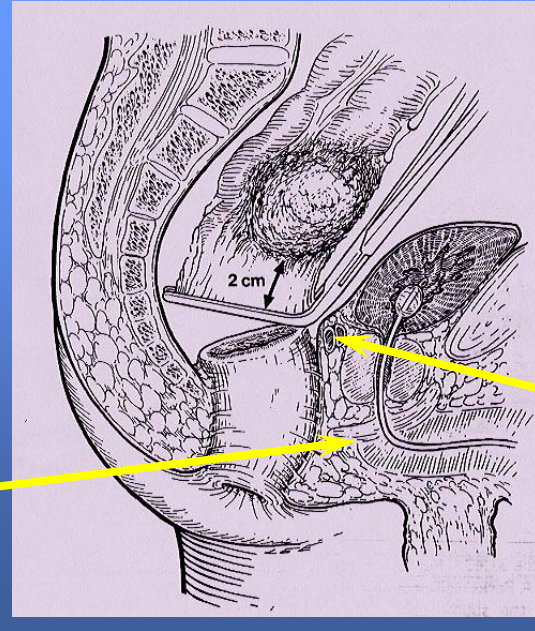
Lymph nodes

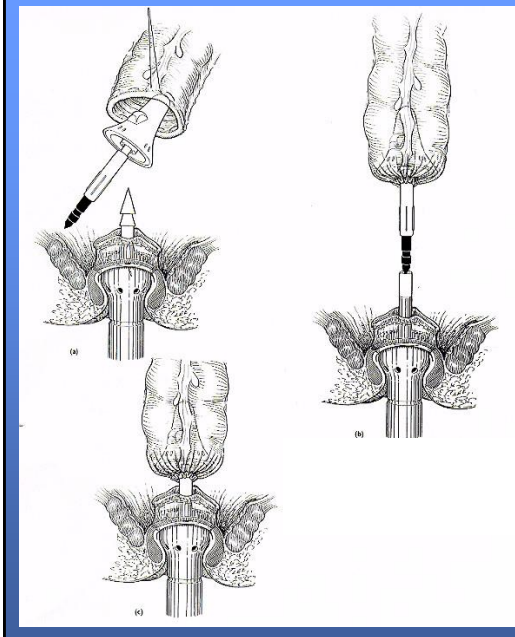


Rectal cancer - no mets

- Above 5cm - anterior resection
- Below 5 cm abdomino-perineal resection

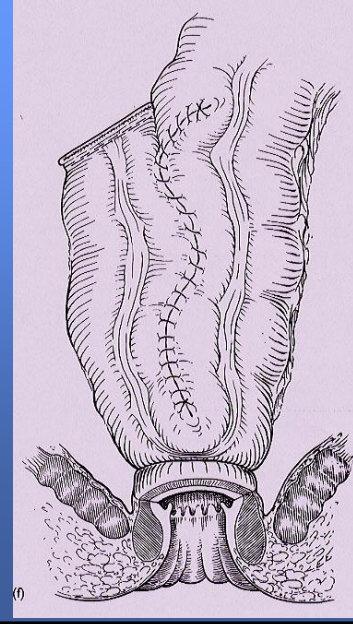
- T3 pre op 25 gray DXT
- T4 pre op 45 gray DXT + chemo





Use of staple guns to faciltate low anastomoses

Colon pouch (neorectum)



Chemotherapy

- Potentially cured patients ADJUVANT
  - Stage C 5-10% survival advantage
  - Stage B 3%
- Advanced disease PALLIATIVE
  - 3 months added life

Chemotherapy

- 5 Fluoro-uracil
- Irinotecan
- Oxaliplatin
- Bevacizumab (anti-VEGF)
- Cituximab (anti-EGFR)

Chemotherapy

"Median survival of 20 months for those with metastatic disease are now within our grasp"

BMJ July 2004

Palliation

- Advanced disease unable to cure
- Frailty of patient

- Tailor surgery to patient's symptoms
  - –Anaemia
  - –Obstruction
  - –Diarrhoea
  - –Incontinence
  - –Tenesmus, pain

Palliation

- Surgery
- Radiotherapy
- Chemotherapy
- Stenting
- Drugs
- Psychological support

Colonic stents

malignant stricture

stent

How can we do better?

- Prevent polyps developing
  - Lifestyle
  - Dietary
  - Pharmacologically
- Remove polyps before malignant transformation
  - Pharmacologically
  - Surgery
- Detect cancers at Stage A or B
  - 2 week waits
  - Patient awareness of symptoms
  - Screening

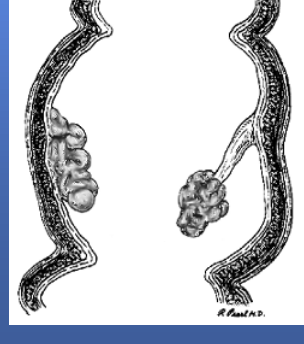
Dietary prevention of colorectal cancer

Evidence	Decreases risk	No relationship	Increases risk
Convincing	Physical activity Vegetables		
Probable	Aspirin		Red meat Alcohol
Possible	Fibre Starch Carotenoids	Calcium Selenium Fish	Obesity Tall Sugar Processed meat Heavily cooked meat
Insufficient	Resistant starch Vitamins C D E Cereals Coffee Folate		Iron

World Cancer Research Fund 1997

Polyp prevention

- **Pharmacological**
- **Use of sulindac in FAP**



- **Aspirin**
- **Bleeding**
- **COX 1 & 2 inhibitors**

Preventing malignant transformation of polyps

- Prophylactic colectomy
  - Polyposis syndromes
  - HNPCC families

Diagnosis of polyps & early malignancy

- Awareness of symptoms
- Risk reduction programmes
  - Target high risk groups
  - Population based

Bowel awareness

Ann R Coll Surg Engl 2000;82:205

Demographic factors associated with know-ledge of colorectal cancer symptoms in a UK population-based survey

C Yardley, C Glover , TG Allen -Mersh

"Total ignorance of colorectal cancer symptoms in the majority of respondents"

High risk groups

- **FAP, Colitis**
- **Family history**

Population risk	**1 in 35**
– one 1st degree relative	**1 in 12**
– one 1st + one 2nd degree relative	**1 in 11**
– one 1st degree relative < 45 yrs	**1 in 10**
– two 1st degree relatives	**1 in 6**
– three 3 1st degree relatives	**1 in 2**

Risk reduction screening programmes

- FOBT
- Flexi sigmoidoscopy+/- FOBT
- Ba enema
- Colonoscopy

FOBT screening

- Nottingham screening study
  - 152 850 people FOBT
- 15% reduction in CRC mortality in those *offered* screening
- 39% reduction in CRC mortality in those *accepting* screening

How to avoid bowel cancer!

- Pick your parents
- Don’t get colitis
- Exercise
- Eat a high vegetable/fibre diet
- Screen your bowel for polyps
- Take an aspirin
- Calcium supplementation