COLORECTAL CANCER

APPROACH & MANAGEMENT

VELAMMAL MEDICAL COLLEGE
HOSPITAL AND RESEARCH INSTITUTE
MADURAI - 09

DEPARTMENT OF GENERAL SURGERY

Intensive Surgical Education Programme
ISEP - 2022

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Fact should know FIRST

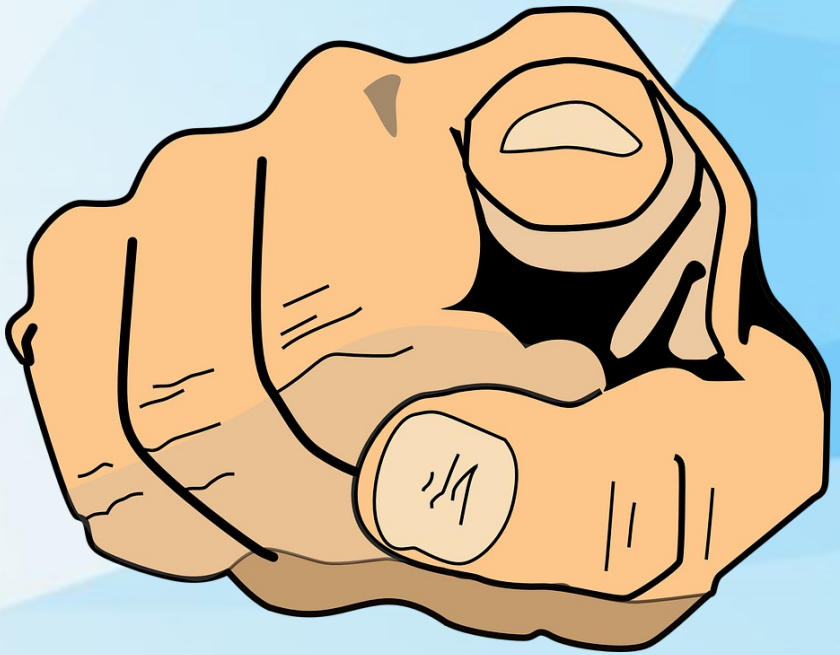
COLO RECTAL CANCER

GOOD PROGNOSIS among the G I T cancers

70% of cancers are in the rectum and recto sigmoid junction

- I am a Colo rectal surgeon
- When treating the rectal cancer what should I know ?

YOUR **RESPONSIBILITY**



AS A SURGEON

YOUR **AIM**

1. NOT ONLY ,CURE THE CANCER
2. TO ACHIEVE THE **QUALITY OF LIFE**

YOUR **AIM**

MANAGEMENT OF RECTAL CANCER, COLOSTOMY TO BE AVOIDED

ULTIMATE **AIM**

In rectal cancer try to

- Preserve sphincter
- Without compromising clearance

by

- Neo adjuvant chemoirrdiation
- Stapler
- Colo – anal anastamosis

successful results depends on three main factors:

- Sound knowledge of the disease
- Wise selection of the modality of treatment
- Accurate and skillful surgical technique

Stanford Cade

- Wise selection of the modality of treatment

Sequence of the treatments will affect the prognosis


YES

LESSON LEARNED

- UPTO the 1990s, Surgery and postoperative adjuvant chemoradiotherapy (CRT) for locally advanced rectal tumors was the gold standard treatment regimen

- High Local recurrence (LR) rates despite the use of adjuvant CRT

CHANGING SEQUENCE

LOCAL RECURRENCE
Based on modality of treatments

- Surgery only
- Surgery + adjuvant irradiation
- Neoadjuvant RT + Surgery
- Neoadjuvant chemo irradiation + Surgery

Reduction in
local recurrence

RECOMMENDATION IN RECTAL CANCER

Neoadjuvant chemo irradiation + Surgery

APPROACH

SIGNS AND SYMPTOMS

	Right Colon	Left Colon	Rectum
Frequency	25%	35%	30%
Pathology	Exophytic lesions	Annular invasive lesions	Ulcerating lesions
Symptoms	Weight loss. weakness,	Constipation, alternating bowel patterns,	bleeding
Signs	Fe-Deficiency Anemia	Bright Red Blood per Rectum, Large Bowel Obstruction	Palpable mass on rectal exam, Bright Red Blood Per Rectum

ORDER OF INVESTIGATION

- **CONFIRMATION OF DIAGNOSIS**
  - SCOPY - Biopsy

- **METASTATIC WORKUP**
  - X-ray chest
  - US abdomen
  - CT scan

COLONOSCOPY

Size

Location

Morphology

Extent

Biopsy

Other parts of COLON

The biopsy must be taken at the edge of the lesion with the normal tissue

COLONOSCOPY

- Detect the lesions and biopsy
- Rule out synchronous lesions

- Limitations- failure to reach / examine fully
  - Splenic flexure (10%)
  - Hepatic flexure (15%)
  - Caecum (20%)

CT SCAN

Extent of Primary

adjacent organ invasion

Nodal status

Metastases

–Liver

–Peritoneam - large

More accurate for T lesions

BARIUM ENEMA

- Fixed filling defect with destruction of mucosal pattern in an annular configuration (apple core sign)

TNM STAGING

Table 29-3 TNM Staging of Colorectal Carcinoma	
Tumor stage (T)	**Definition**
TX	Cannot be assessed
T0	No evidence of cancer
Tis	Carcinoma in situ
T1	Tumor invades submucosa
T2	Tumor invades muscularis propria
T3	Tumor invades through muscularis propria into subserosa or into nonperitonealized pericolic or perirectal tissues
T4	Tumor directly invades other organs or tissues or perforates the visceral peritoneum of specimen
Nodal stage (N)	
NX	Regional lymph nodes cannot be assessed
N0	No lymph node metastasis
N1	Metastasis to one to three pericolic or perirectal lymph nodes
N2	Metastasis to four or more pericolic or perirectal lymph nodes
N3	Metastasis to any lymph node along a major named vascular trunk
Distant metastasis (M)	
MX	Presence of distant metastasis cannot be assessed
M0	No distant metastasis
M1	Distant metastasis present

DECISION MAKING -OPERABILTY

HISTORY TAKING -INOPERABILTY

- Back ache – inoperable
- Tumor infiltration into pelvic plexus

CLINICAL SIGNS - INOPERABILTY

- Ascites
- Fixed mass
- Liver metastases
- Blumer’s shelf deposit
- Pleural effusion

CT SCAN- INOPERABILTY

Extent of Primary - adjacent organ invasion

Nodal status More than 1 cm nodes in mesorectum

Principal nodes more than 1 cm

Metastases

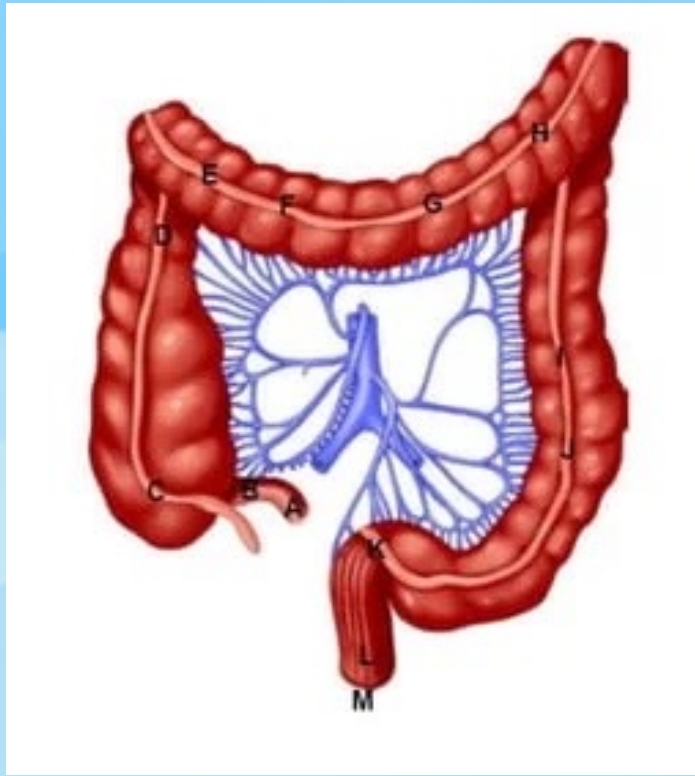
–Liver

–Peritoneam - large

SURGICAL PRINCIPLE

COLON EXTENT OF RESECTION

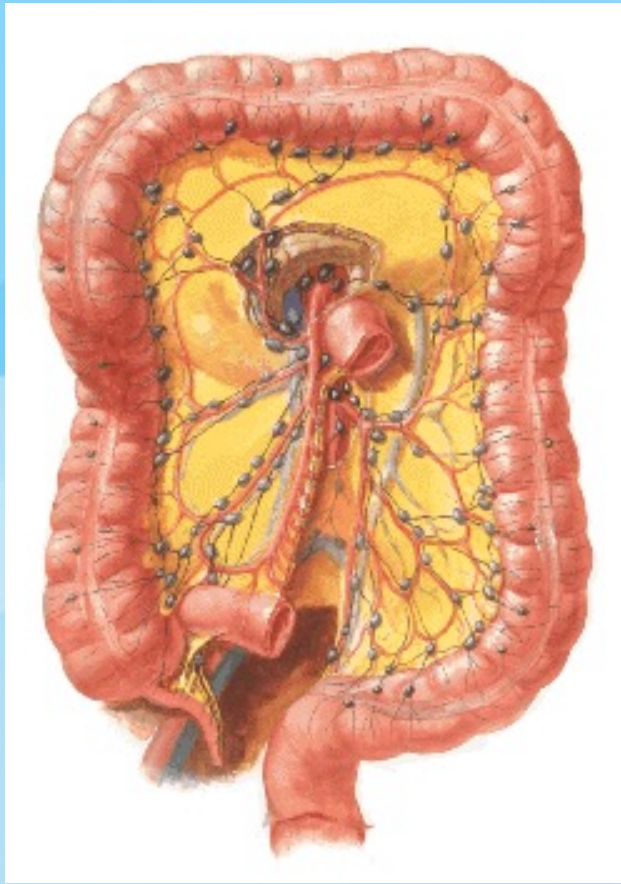
- 5cm. of normal bowel proximal and distal to the tumor



COLON EXTENT OF RESECTION

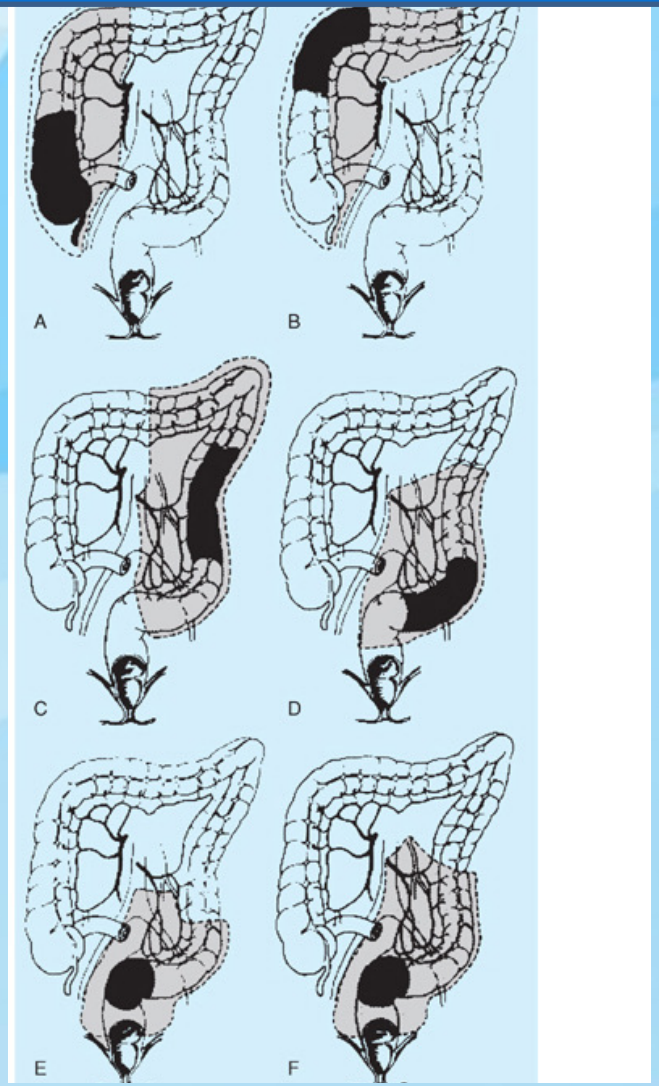
Determind by the lesion size and location

- Determined by the blood vessels that must be divided to remove the lymphatic drainage of the tumor bearing portion of the colon with tumor free margins



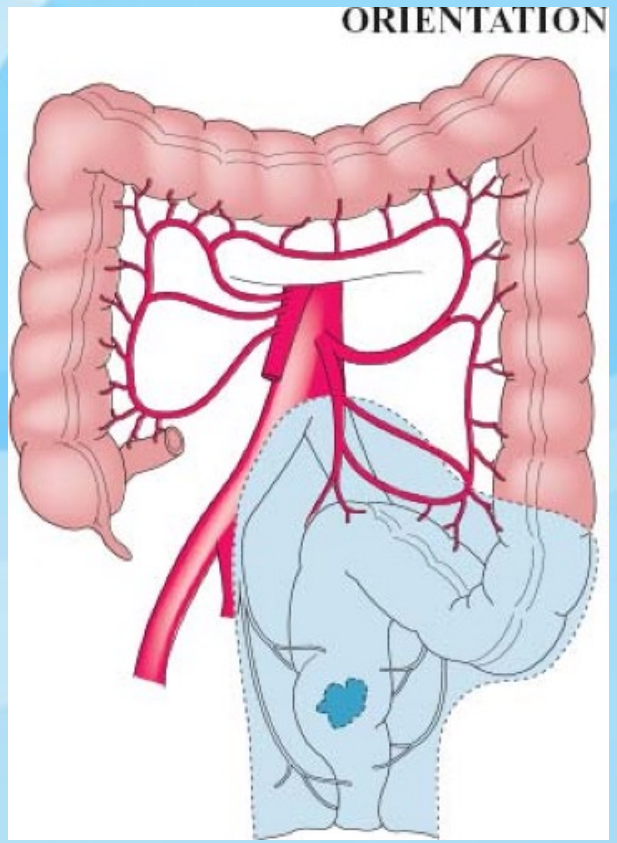
OPTIONS AVAILABLE

Right Hemicolectomy
Extended Right Hemicolectomy
Left Hemicolectomy
Segmental resection
Sigmoid colectomy
Total Abdominal Colectomy: UC, FAP Syndrome/ FH



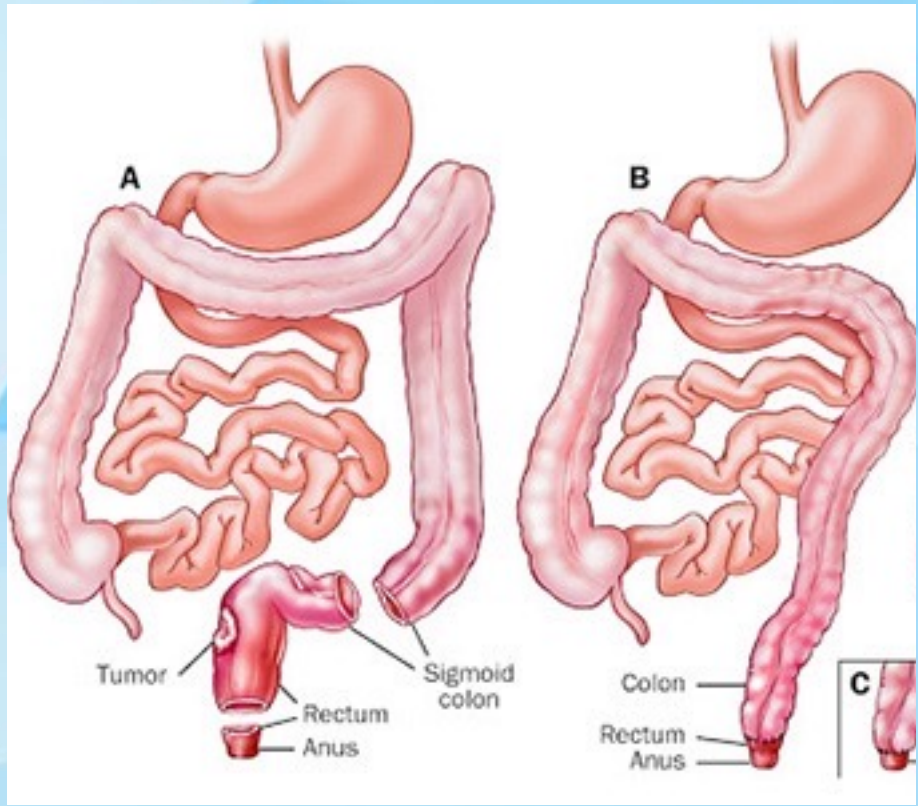
CONCEPT OF APR

- It is a enbloc resection of rectum, anal canal and mesorectum
- With end colostomy.



CONCEPT OF AR

- It is a enbloc resection of rectum, mesorectum
- With internal anastomosis.



ONCO PRINCIPLE

ONCO PRINCIPLES

- Margins
- Surgical planes
- Node count
- Ligating artery at its origin

DONT'S

- Tumor spill
- Crushing of lymph node

MARGIN

LINEAR MARGINS

1. PROXIMAL – 5 CM
2. DISTAL - ?

CRM – LATERAL MARGIN

- CRM is the closest radial margin between the deepest penetration of the tumor and the edge of resected soft tissue around the rectum and should be measured in millimeters (mm).

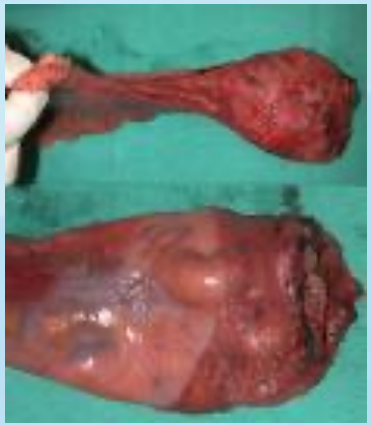
LATERAL MARGINS

1. MESORECTAL EXCISION

2. LYMPHADENECTOMY

MESORECTUM

- Describes by Heald
- It is a cushion of fatty tissue,that surrounds the rectum posterolaterally and is covered by a membrane called fascia propria
- Majority of + ve ,lymph nodes present here



TOTAL MESORECTAL EXCISION

- Commonest cause of local recurrence in rectal cancer is incomplete excision of mesorectum
- So total mesorectal excision [TME] with circumferential clearance of rectal cancer is the procedure of choice
- TME is mandatory in lower and middle third rectal cancer
- In upper third cancer, 5cm clearance of mesorectum from lower margin of the cancer is enough

LINEAR MARGIN

LINEAR MARGINS

1. PROXIMAL – 5 CM
2. DISTAL - ?

DISTAL MARGIN – NEW CONCEPT

- It should be negative margin

LYMPH NODE DISSECTION

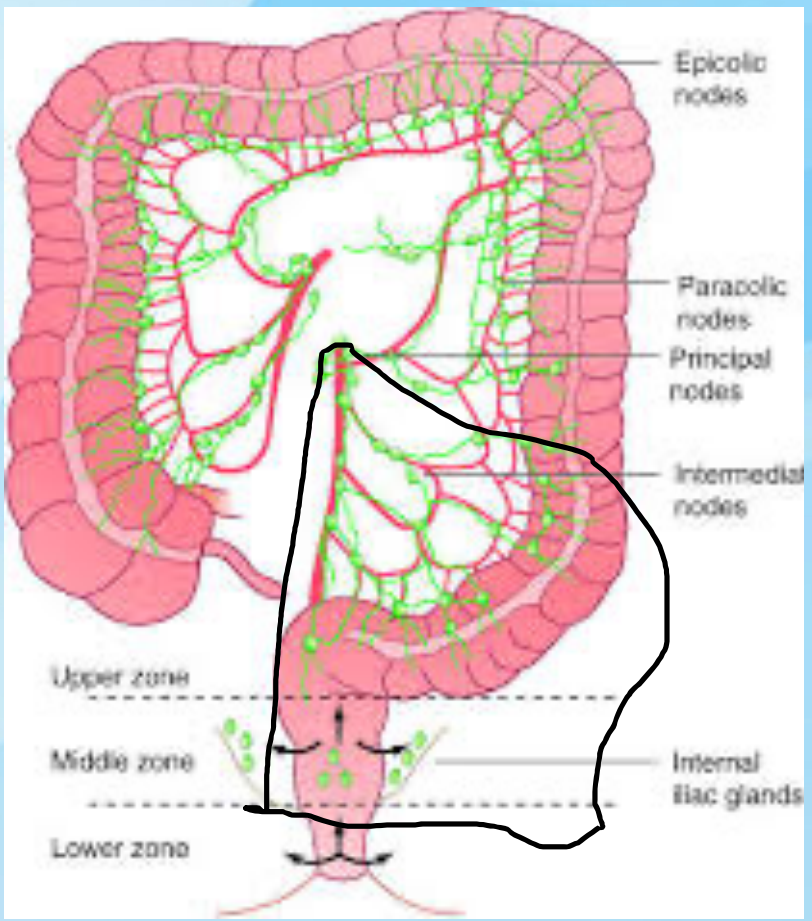
COLON LYMPHATIC DRAINAGE

First tier -Epicolic nodes
adjacent to colon

Second tier – Para colic
along the marginal vessels

Third tier – intermediate nodes
along the named branch

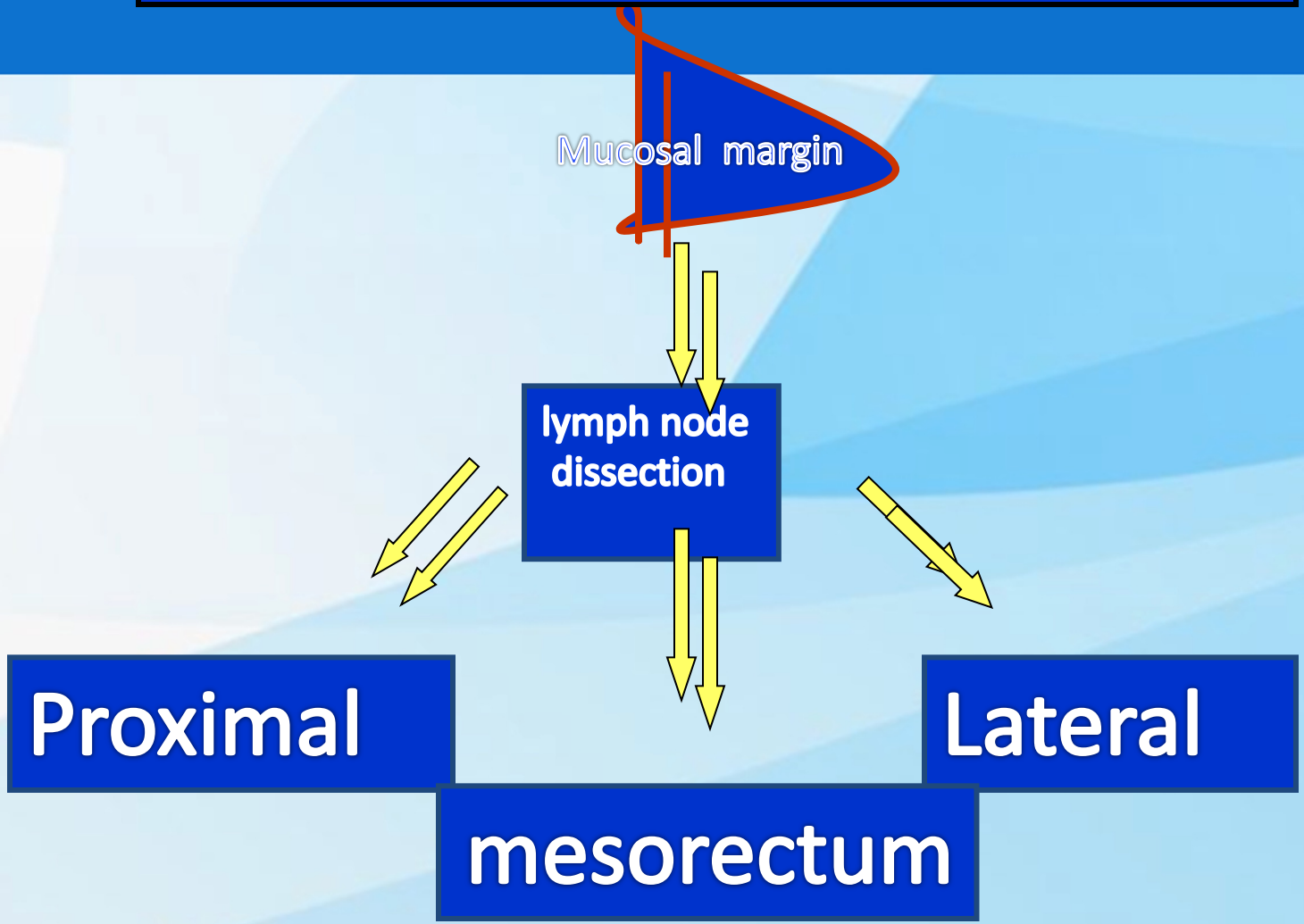
Fourth tier – Principle node
along the S.M.A, I.M.A



ADEQUATE LYMPHADENECTOMY HOW MANY NODES?

- **Colon - 12 nodes**

What follows is.....



ANATOMICAL PLANES

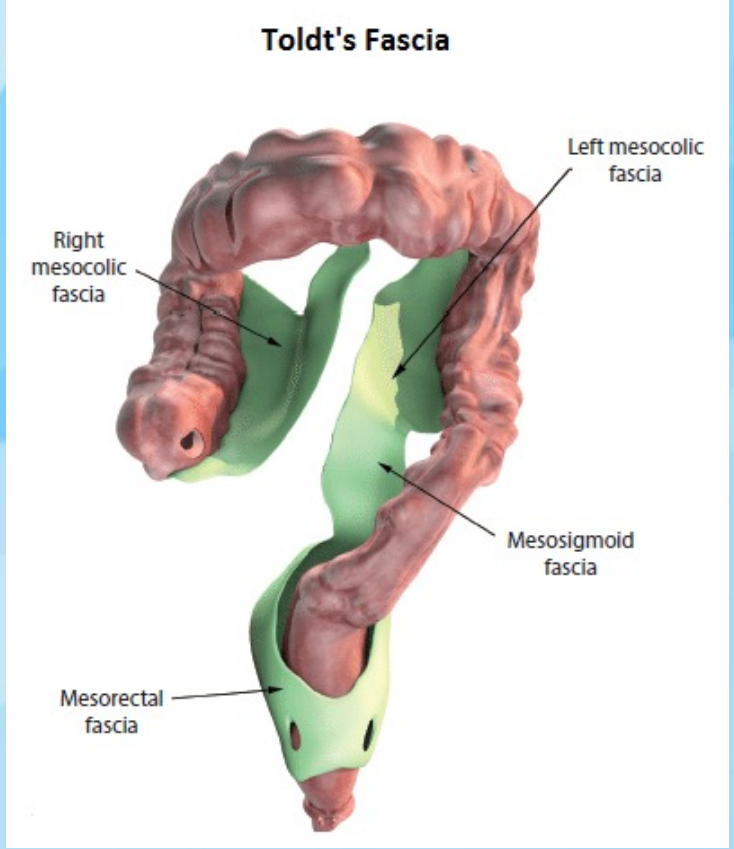
WHAT IS PLANE

- It is a avascular area
- Dissection of this plane resulted in Good oncological clearance
- There is no bleeding in this plane.

PLANE 1 - TOLDTS FASCIA PLANE

- fascial plane which was formed by the fusion of the visceral peritoneum with the parietal peritoneum.

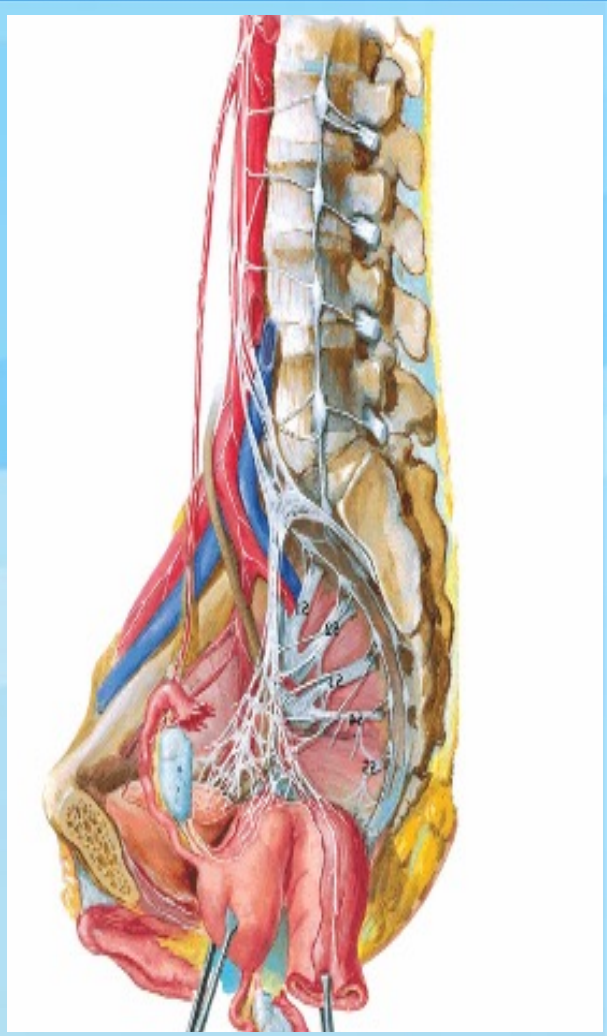
- It is found between the two mesothelial layers that separate the mesocolon from the underlying retroperitoneum.



TRICK OF SURGERY

NERVE TO BE PRESERVED

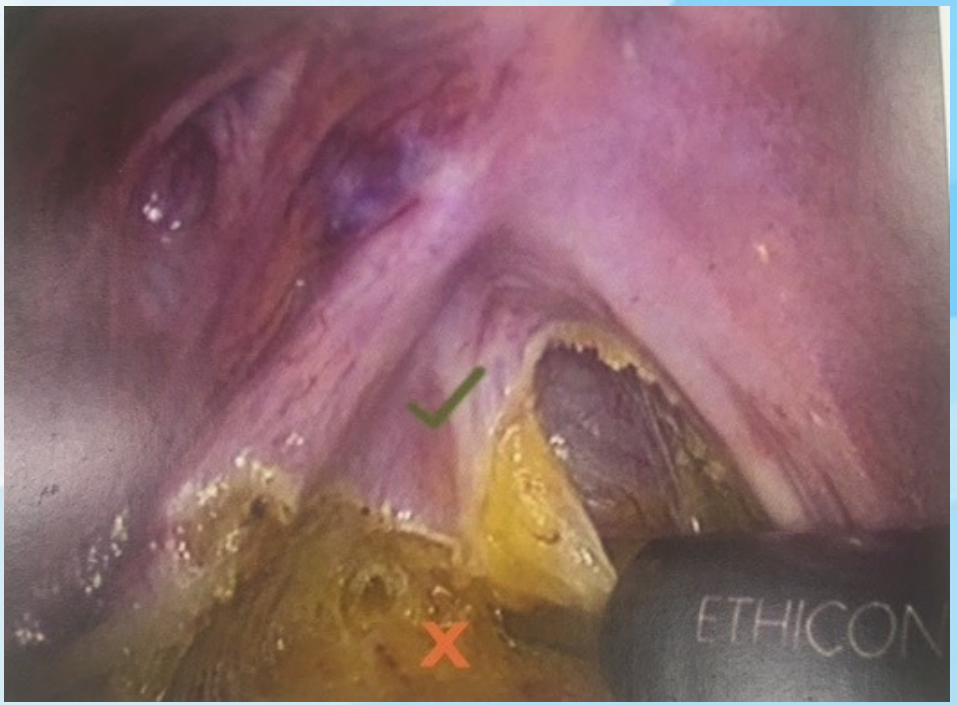
- Sympathetic – Hypogastric nerve
- **superior pelvic plexus**
  - at sacral promontary
  - single midline
- **Inferior pelvic plexus**
  - At lateral wall of the rectum with Para sympathetic –Nervi ergentis
  - Laterally two



- Radical treatment of rectal cancer results in high rate of impotence in male
- In rectal surgery, posterior plane of dissection is in-between the mesorectum and presacral fascia. It is an avascular plane and contains hypogastric nerve
- Hypogastric nerve should be dissected off from mesorectum by sharp dissection

ANTERIOR PLANE – BLADER / RECTUM

FAT BELONGS TO RECTUM



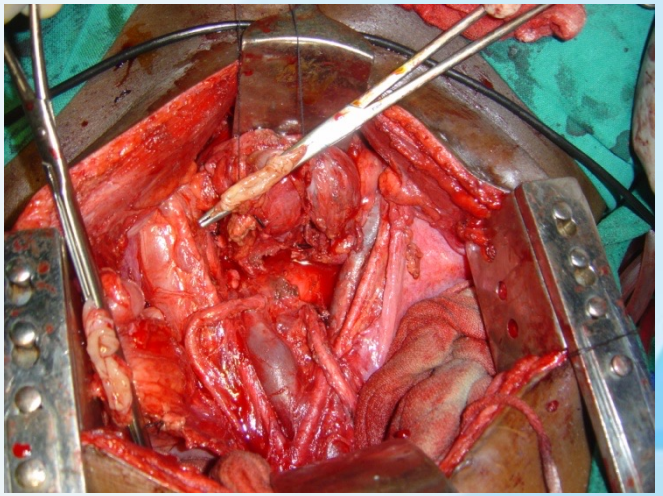
ADJACENT ORGAN INVOLVEMENT

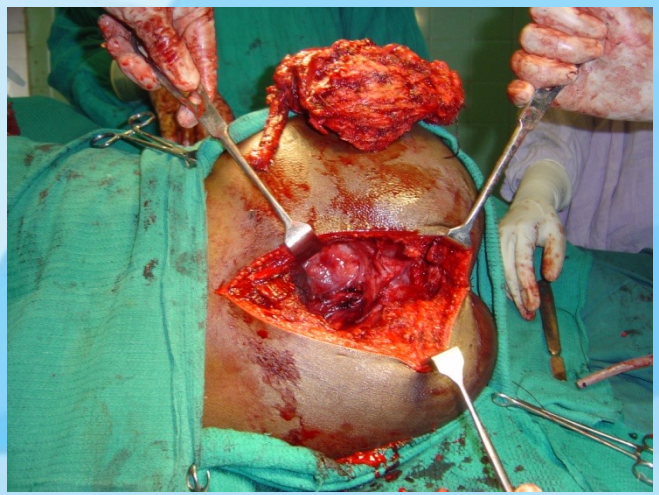
ADJACENT ORGAN INVOLVEMENT
IS IT AN ADVANCED STAGE ?

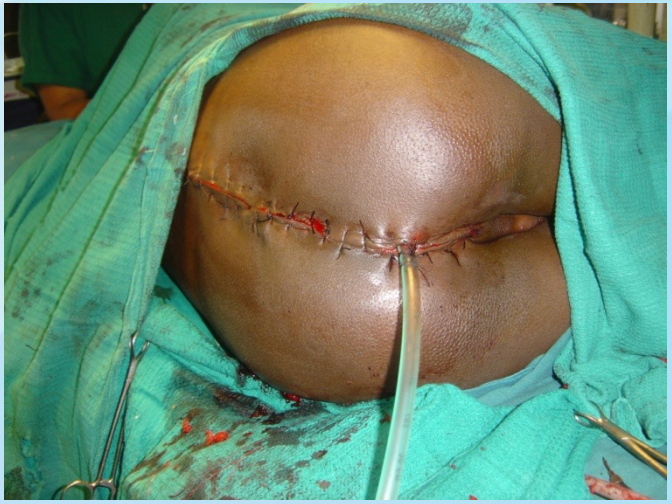
NO

- Extraperitoneal adjacent organ involvement is T4 and is still staged as IIB(T4 N0M0). Not a advanced stage.
- Ultra Radical procedures with neo adjuvant chemoradiation curative intent is a worthwhile option

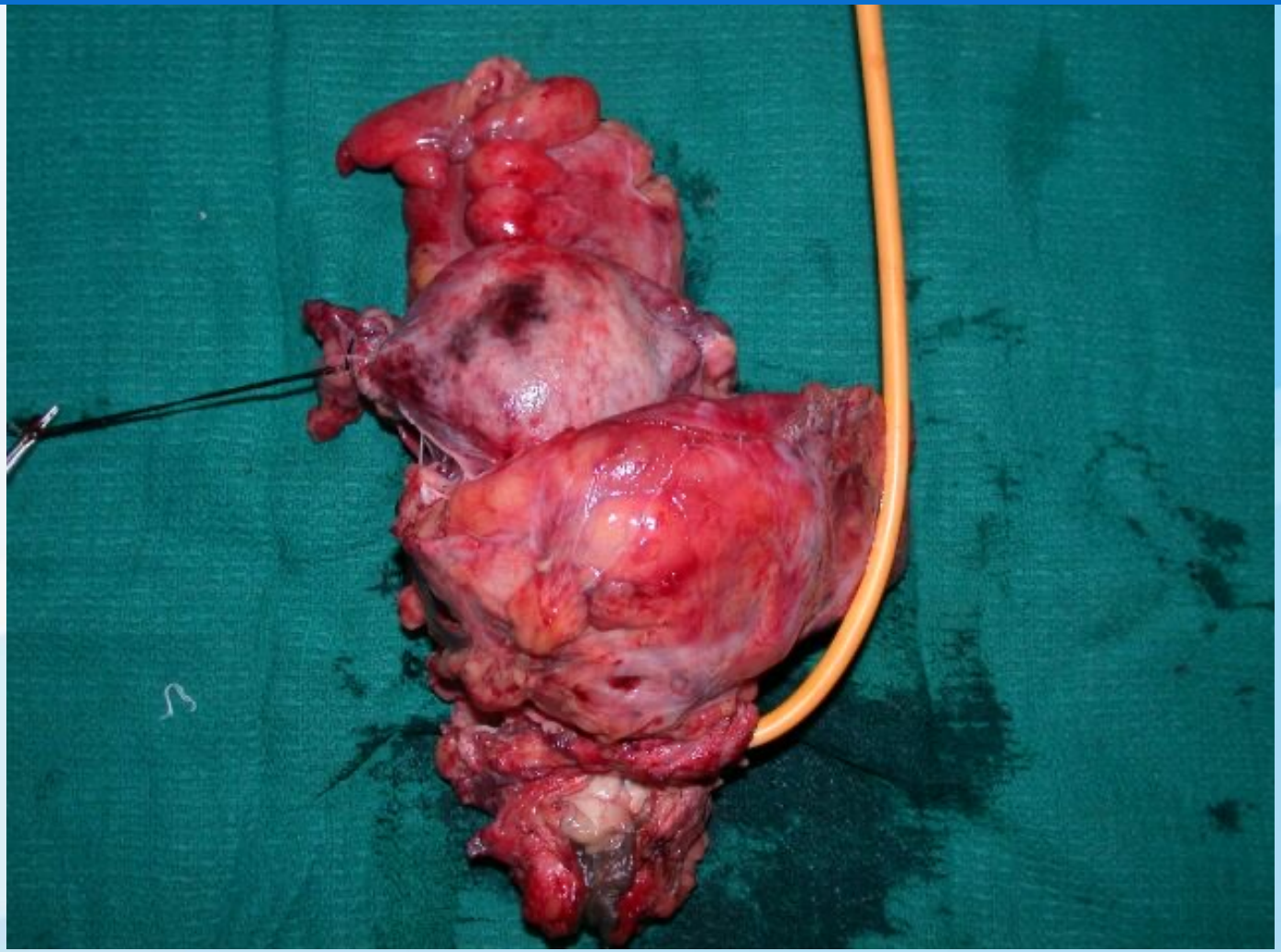
RECTAL CANCER ENBLOC SACRAL RESECTION







PELVIC EXENTERATION



ADJUVANT TREATMENT

TREATMENT OPTION

- **OPERABLE**
  - **COLON – Surgery & Chemotherapy**
  - **RECTUM – Surgery & Chemoirradiation**
- **INOPERABLE**
  - **Palliative surgery & Chemotherapy**

Ca. Colon – Adjuvant Chemo. Indications

- T3, T4 lesions - selected cases
- Any T with N1 or N2 – all cases

FACTORS FOR - TREATMENT **SEQUENCE**

Depends on

Site of lesion – Upper, Middle, Lower

Lateral spread – Fixity, Adjutant organ invasion, Nodes

Distal Spread – Lung & Liver involvement.

TREATMENT **CONCEPT**

- **T1, T2,** Lesion - Upper 1/3, Middle 1/3
  - Only surgery

- **T1, T2,** - Lesion Lower 1/3
  - Surgery & Chemo radiation

- **T3 or N1, N2 Lesion**
  - Surgery & Chemo iradiation

- T4 – Adjacent organ invasion
  - Ultra Radical Surgery & Chemo iradiation

- LIMITED METASTASIS -Less than 3 in Liver, Single Lung metastasis
  - Metastatectomy + Local Treatment

- Metastasis More than 3 in Liver, Multiple Lung metastasis
  - Palliative Treatment

ONLY SURGERY

T1 ,T2 lesion in upper and middle rectum

SURGERY AND CHEMOIRRADIATION

1. T3 , T4 ,
2. Node positive
3. Lower rectal cancer
4. After conservative surgery
5. Before exenteration

SURGERY AND CHEMOIRRADIATION

WHICH MODALITY TO BE GIVEN FIRST

PRE-OPERATIVE VS POST-OPERATIVE

WHAT NCCN GUIDELINE SAYS

- For T3, N0 or T any N1-2 lesions
  - should be treated by preop CRT unless medically contraindicated
- Then undergo resection 6 wks after completion of neoadjuvant therapy
- Post-op adjuvant chemotherapy for 6months

POTENTIAL ADVANTAGES

- **Reduction in tumour size**

  Improve respectability
  Increase sphincter preservation

- **Decrease risk of Local recurrence**
- Better Radial margins - Decreases the chances of Local recurrence.

RT VS CHEMO RT

CHEMO RT VS RADIOTHERAPY

Local control in T3/T4 rectal cancer

TRIALS	PRE-OP CHEMO RT	PRE-OP RT
EORTC 22921	8.7%	17.1%
FFCD 9203	8%	16.5%
GERMAN-94	6%	

RADIOTHERAPY

SHORT COURSES VS LONG COURSES

WHAT IT IS..

long course preoperative chemoradiotherapy

- Doses of RT (2 gy per fraction)
- Over 5-6wks
- Total dose of 45-50.4gy
- With administration of concurrent 5-fluorouracil-based chemotherapy

short course preoperative radiotherapy

- RT over 5days
- (5gy/day for 5days)
- Without chemo,
- Followed by surgery within 10 days of first session of RT
- aim: sterilize resection margin

SPHINTER PRESERVATION

Long course

- Localy advanced lesions and for sphincter preserving surgery

FIELD STERILIZATION

Short course

- T3 and
- N1 lesion

CHEMOTHERAPY

CHEMOIRRADIATION

Regimen 5FU + leucovarin once in 28 days

- **Dose 5FU – 425mg/m2 D1 to D5**
- **Leucovarin – 20mg/m2 D1 to D5**

TAB CEPECITABINE 1000mg BD 14 days

PROGNOSIS

PROGNOSITC FACTORS

PRESENTATION

- Younger age < 40 yr
- Long symptomatology
- Obstruction/ perforation
- Ulcerative lesion
- BT

PATHOLOGY

- High grade
- Colloid/ Signet ring cell
- LVI
- Perineural invasion

COLORECTAL CANCER

Review of 13 studies by Alan P. Meagher – specialist surgeon achieved significantly better results than other surgeons in all outcome measures including choice of surgery (TME and sphincter preservation), adjuvant treatment (preop radiation), local recurrence rate and overall survival

Med. J. Aust. 1999 Sept 20; 171(6) 308-10

IS OPERATING SURGEON REALLY A PROGNOSTIC FACTOR?

YES

Fact, always known but scientifically and statistically accepted only recently


10
Ways to Reduce Your Risk of
Colon Cancer
3
QUIT
SMOKING
4
CUT RED AND PROCESSED MEATS FROM YOUR DIET
5
GET ENOUGH VITAMIN D
6
EAT FIBER-RICH FOODS
7
AVOID UNNECESSARY ANTIBIOTICS
8
EAT CANCER-FIGHTING FOODS
9
DRINK LESS ALCOHOL
2
FIGHT OBESITY
1
EXERCISE DAILY
10
GET REGULAR SCREENINGS
Top 10 Home Remedies

TAKE HOME MESSAGE

YOUR **AIM**

MANAGEMENT OF RECTAL CANCER, COLOSTOMY TO BE AVOIDED

Sequence of the treatments will affect the prognosis

RECOMMENDATION IN RECTAL CANCER

Neoadjuvant chemo irradiation + Surgery

THANK YOU