* For further details in history and examination please follow the below link for the audio.

***Model summery***

70-year-old retired bank manager presented with painless fresh per-rectal bleeding for 3 months’ duration. Blood applied on stool and occasionally he noted few drops of fresh blood after defecation. Patient experienced feeling of incomplete evacuation 2 months ago and has experienced tenesmus for last 2 weeks. There is a history of alteration of bowel habits towards constipation for last 6 months’ duration but no history suggestive of early morning spurious diarrhea. His symptoms progressed over this period but denies a history suggestive of anemia or bowel obstruction. Patient denies a history suggestive of IBD or diverticulitis. Except for unhealthy diet patient has no other risk factors like family history of bowel cancer. He has some feature of locally advanced disease but no features of distal metastasis. Patient is well fit except for his primary problem and he has a good family support with moderate income. His family history, past medical history and allergic history is not significant.

On general examination found nothing significant. His digital rectal examination revealed mass at mid rectum 7 cm from anal verge at anterior wall. Lesion occupying 50% of its circumference and fixed to anterior structures. Both resting and squeezing anal sphincter tone were normal.

Investigation plan

1. To assess patient’s general fitness
2. To confirm diagnosis
3. To prepare the patient for the surgery.

1.General fitness

* Hb – Patients with chronic bleeding can have anemia which has huge role in patient’s outcome
* Albumin- To assess patient’s liver synthetic capacity and serum protein levels important for healing.
* Renal functions – important before contrast CT and overall patient’s outcome
* Liver functions – can have altered liver functions when liver metastasis presents.

2.To confirm diagnosis

* Colonoscopy and biopsy –Prepare the bowel with poly ethylene glycol. Need to Examine up to caecum to detect primary lesion and **synchronous lesions**. (lesion present at least 5 cm away from primary lesion which present at same time or within six months of detecting primary lesion) And take representative biopsies from lesion for histology.
* CEA Levels – levels will be elevated at the presence of malignancy. His is not just to have a diagnosis but it is paramount in follow-up.
* CECT (chest, abdomen and pelvis)- To stage the disease. Sometimes this can be with oral and rectal contrast.

3.To prepare patient for the surgery.

* 2D Echo- to assess cardiac functions
* Cessation of smoking
* Patient education
* Family meeting
* MDT discussion
* Nutritional optimization.
* Anemia correction
* Book icu bed before surgery.
* Consent.

**Definitive treatment**

**1.Neoadjuvat treatment**

To downstage the tumor for organ and sphincter preservation. This involves local radiotherapy and systemic chemotherapeutic agents.

Depending on the location of the tumor surgical intervention varies.

Principle is to take adequate tumor free proximal and distal resection margins along with all involved lymph nodes.

Surgical options

**2.colectomies**

* R/ hemicolectomy for tumors in the caecum or ascending colon
* Extended right hemicolectomy for tumors in the transverse colon
* L/ hemicolectomy for tumors in the descending colon
* Anterior resection (excision of tumor involving rectum along with mesorectum and inferior mesenteric artery territory lymph nodes preserving anal canal. anastomosis of proximal colon to rectal stump or anal canal. This is continence preserving procedure. Temporary DE functioning ileostomy made to reduce anastomosis leak complications.) for mid and upper rectal malignancies
* Abdominal-perineal resection for tumors involving lower rectum and anal canal. (excision of lower rectum and anal canal. Patient will be end up with permanent end colostomy at left iliac fossa region.)

**3.Adjuvat treatment**

After surgical intervention patient will be subjected to systemic chemo therapy to control microscopic systemic disease.

**4.Follow-up.**

Colonoscopy yearly to detect metachronous lesions

CECT annually to detect local recurrences or metastatic disease

CEA levels six-monthly to detect early recurrences.

Regular colostomy or ileostomy care.