



# IRON DEFICIENCY ANAEMIA

Dr.Kapur- Consultant Gastroenterologist BDGH

Mr.Shiwani- Consultant Upper GI surgeon BDGH

Dr.Straffen Consultant Biochemist BDGH

# Interactive case 1

- 47 yr old female, presents with irregular heavy periods, lower abdo discomfort
- No upper or lower GI symptoms
- Family H/O bowel cancer in father
- O/E- Pallor. No other abnormality
- Hb 8.8gms, MCV 71, MCH24, platelets 624, WBC 5.4

# Interactive case 1

- What is the problem?
- How will you investigate?
- Does she need referral?
  - Urgent/ routine?

# How common and important?

- 1-2% adults have IDA
- Fe deficiency without anaemia
  - 11% women
  - 4% men
  - NHANES data
- Relative risk of GI malignancy in 2 years is 31

# Causes of iron deficiency anaemia

## ■ Poor dietary intake of iron

- Elderly, teen fads, vegetarians

## ■ Inadequate absorption of iron

- Coeliac, malabsorption, atrophic gastritis, gastric bypass surgery

## ■ Loss of Iron

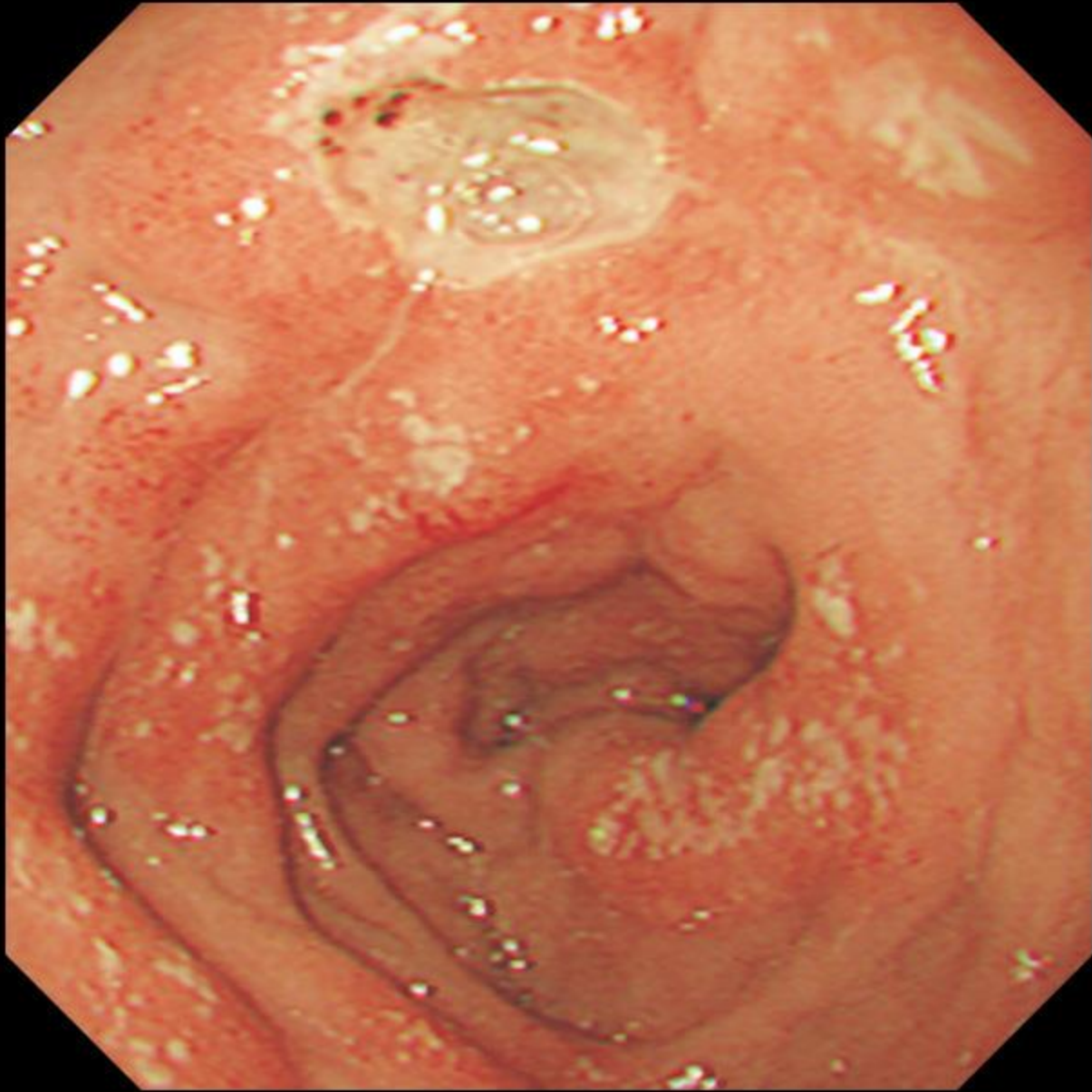
- Overt or Occult
- Repeated blood donations
- GIT loss or GU loss
- Drugs like NSAIDs, Warfarin etc

# Causes of Iron deficiency anaemia

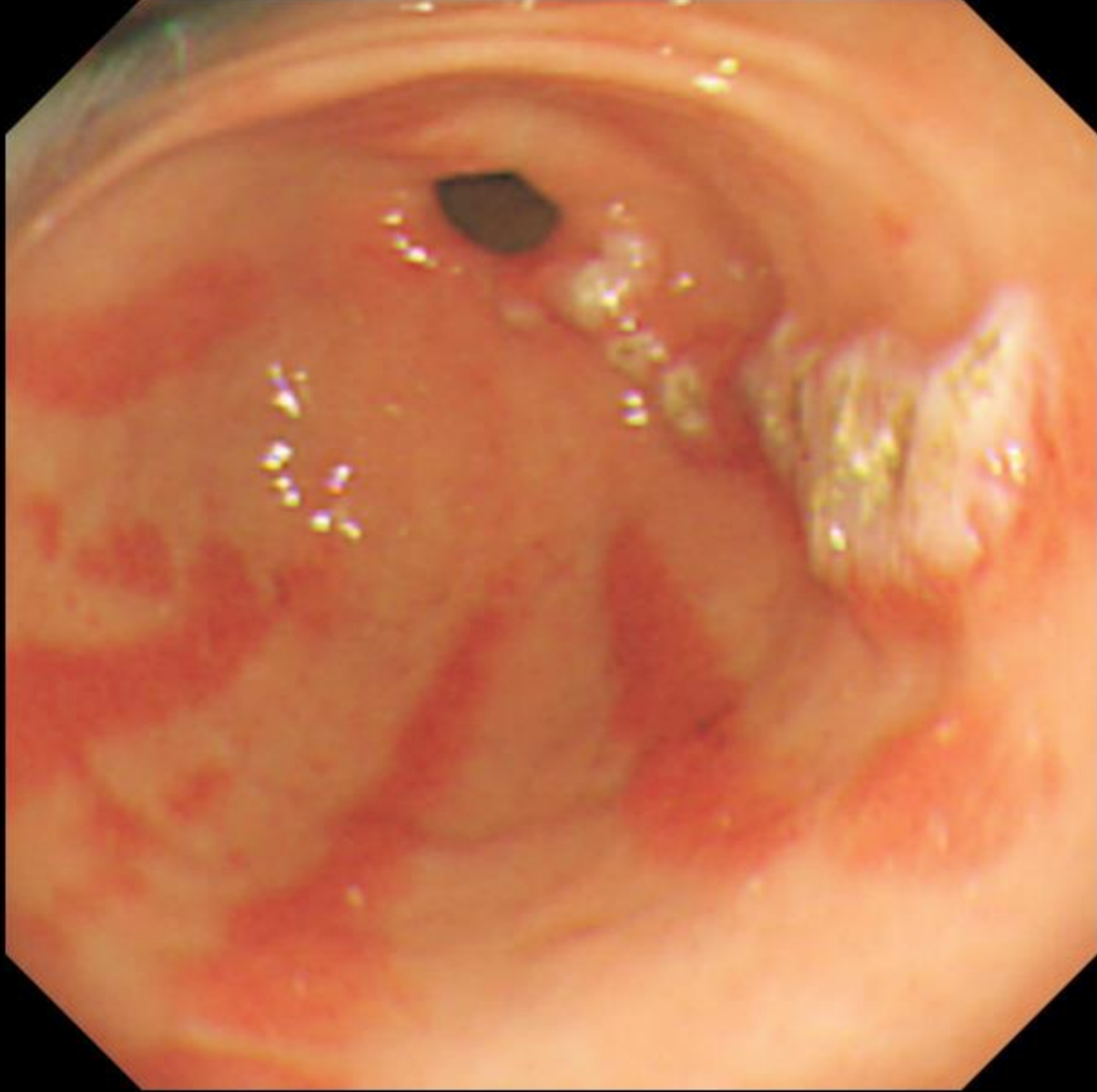
## ■ Rarer causes

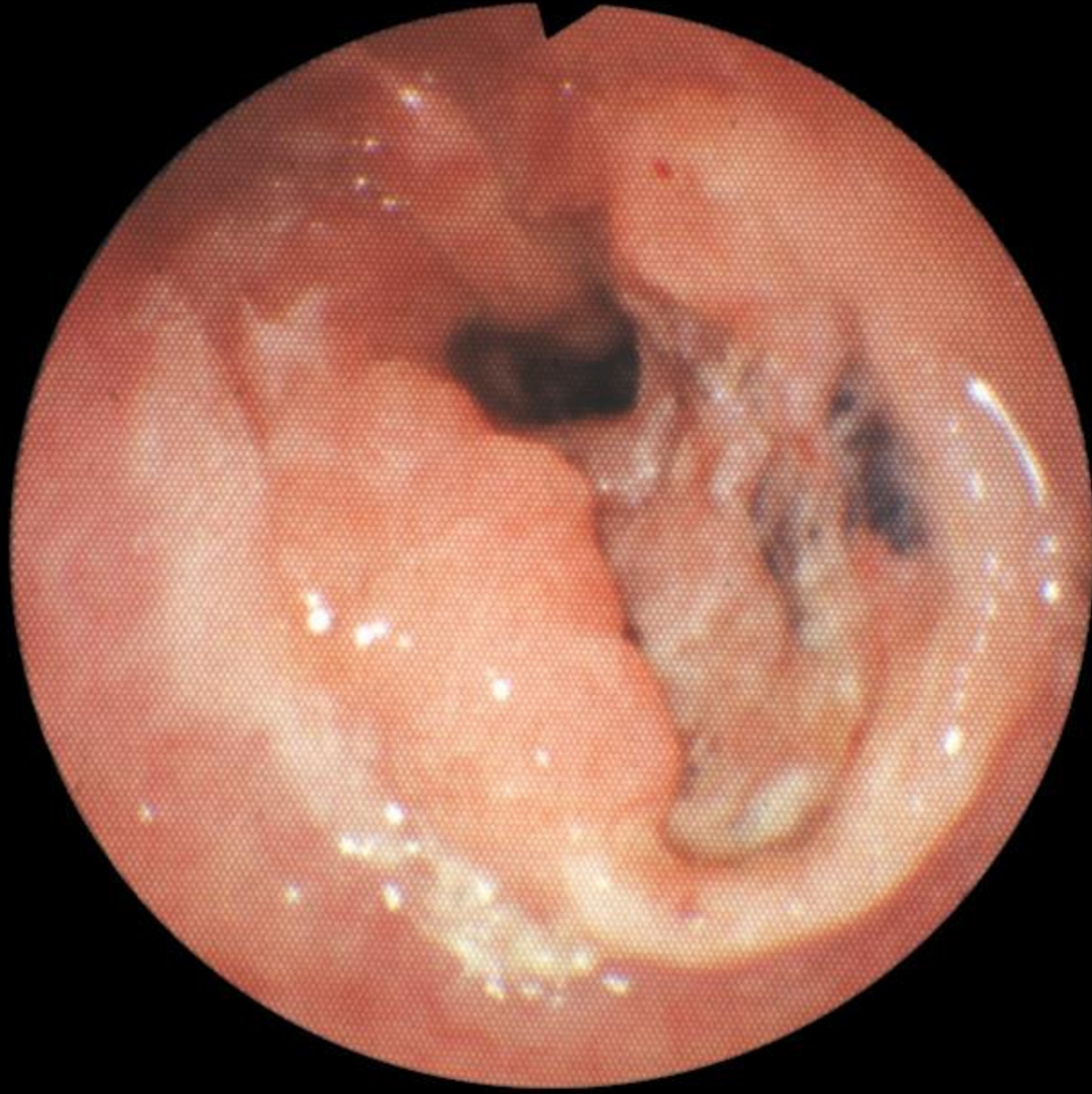
- Intravascular haemolysis
  - PNH
- Prosthetic metal valves
- Gastric bypass surgery
- Diabetes mellitus





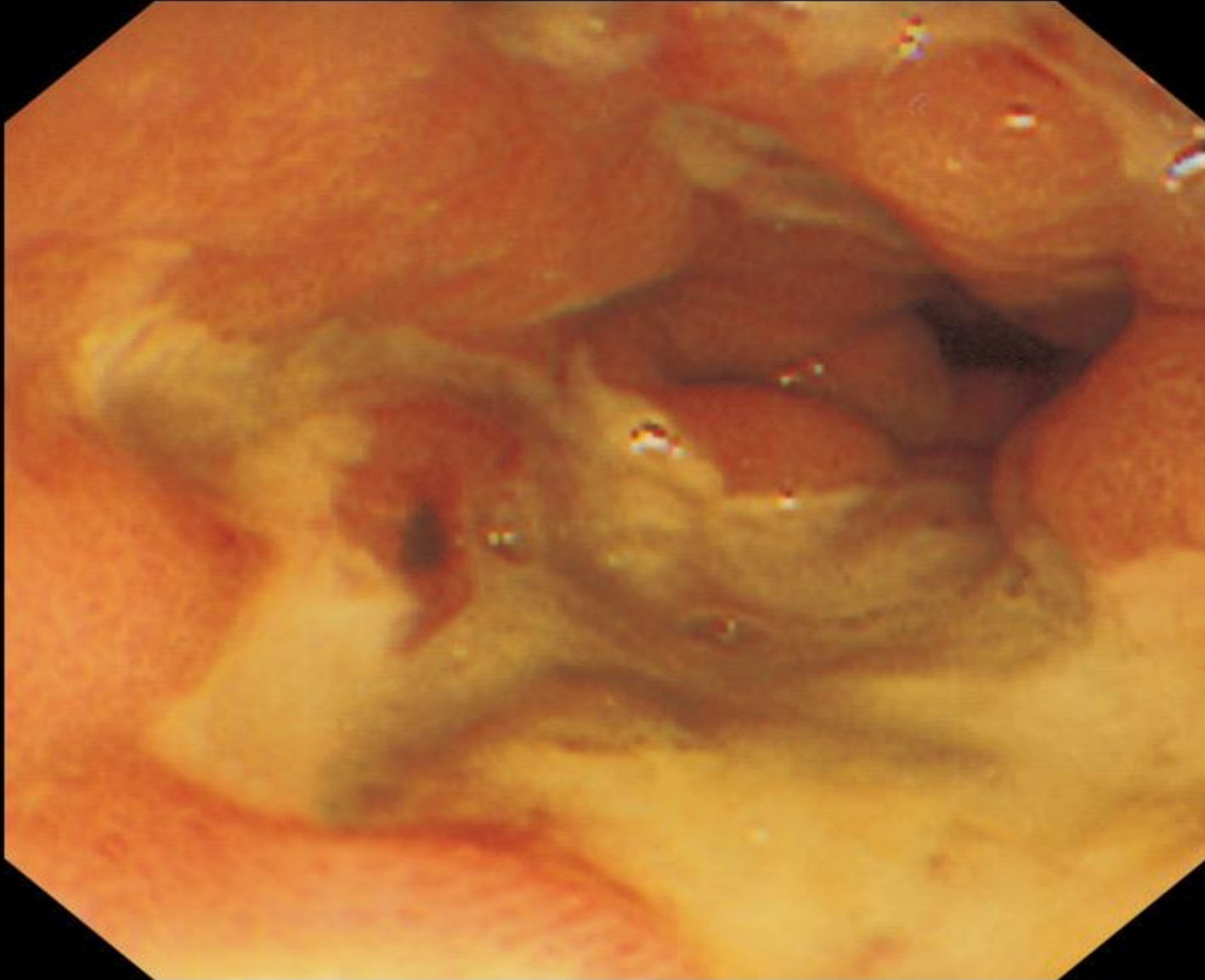






# Crohn's disease

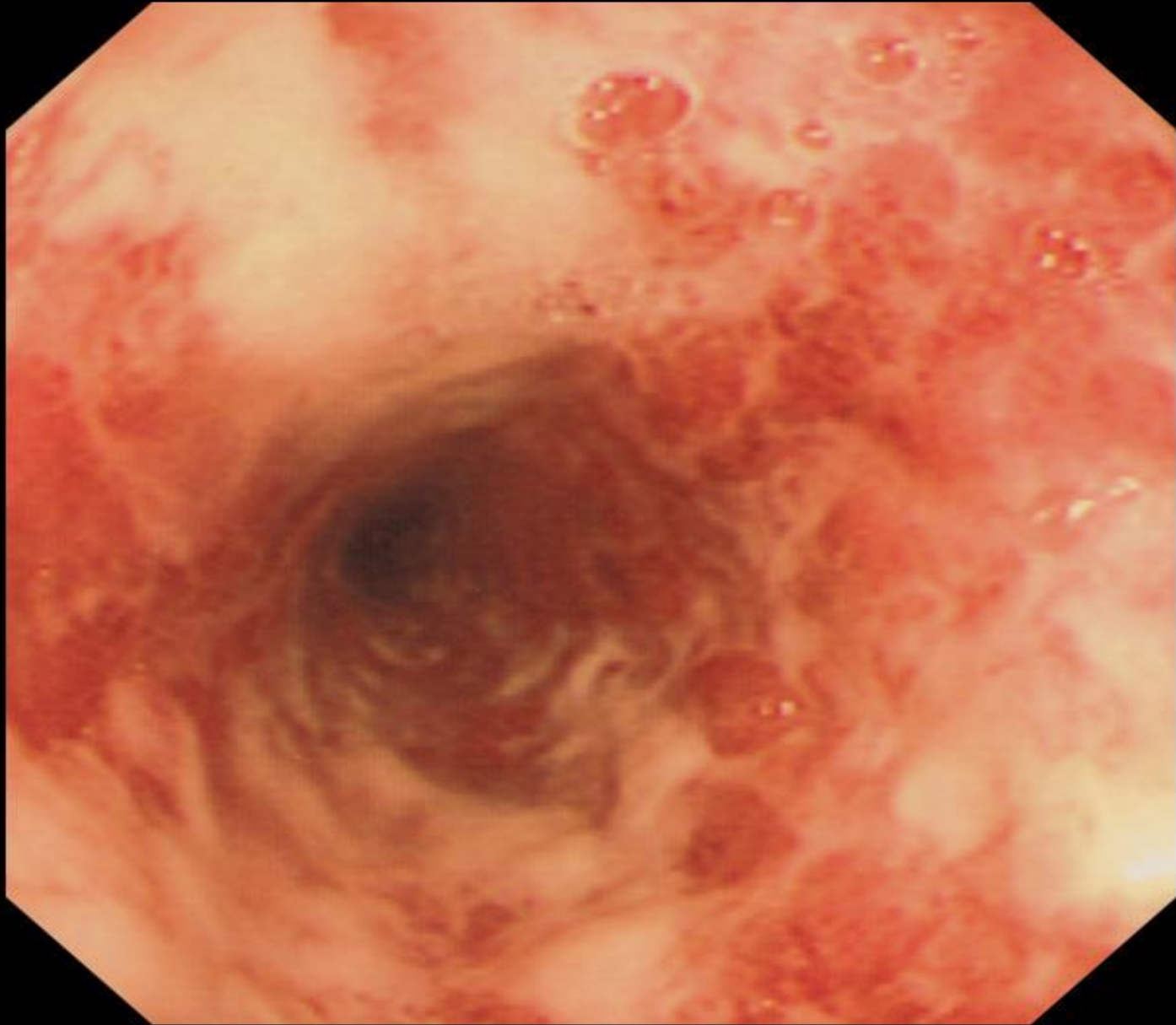
© 2002 Blackwell Publishing Ltd

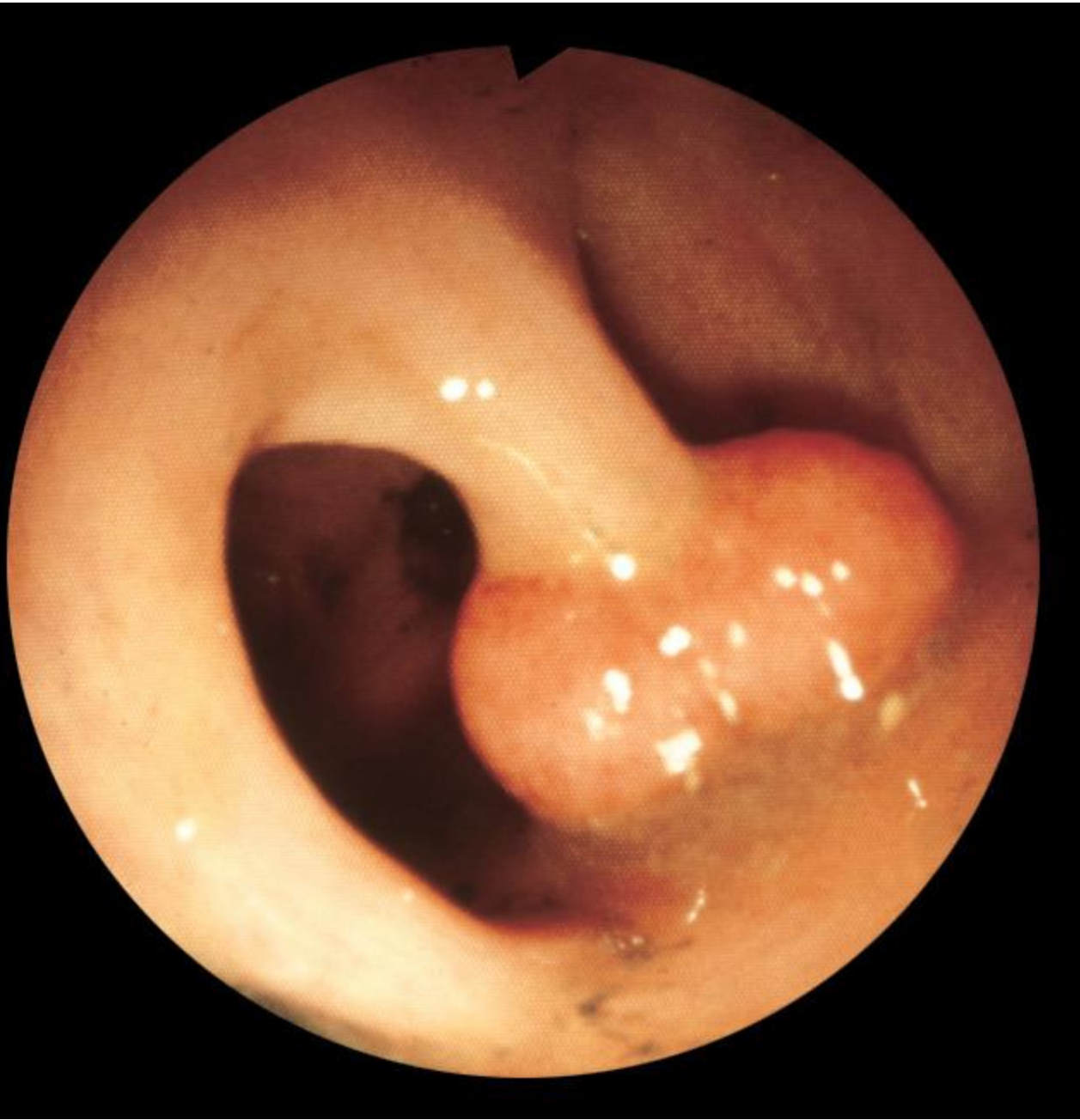


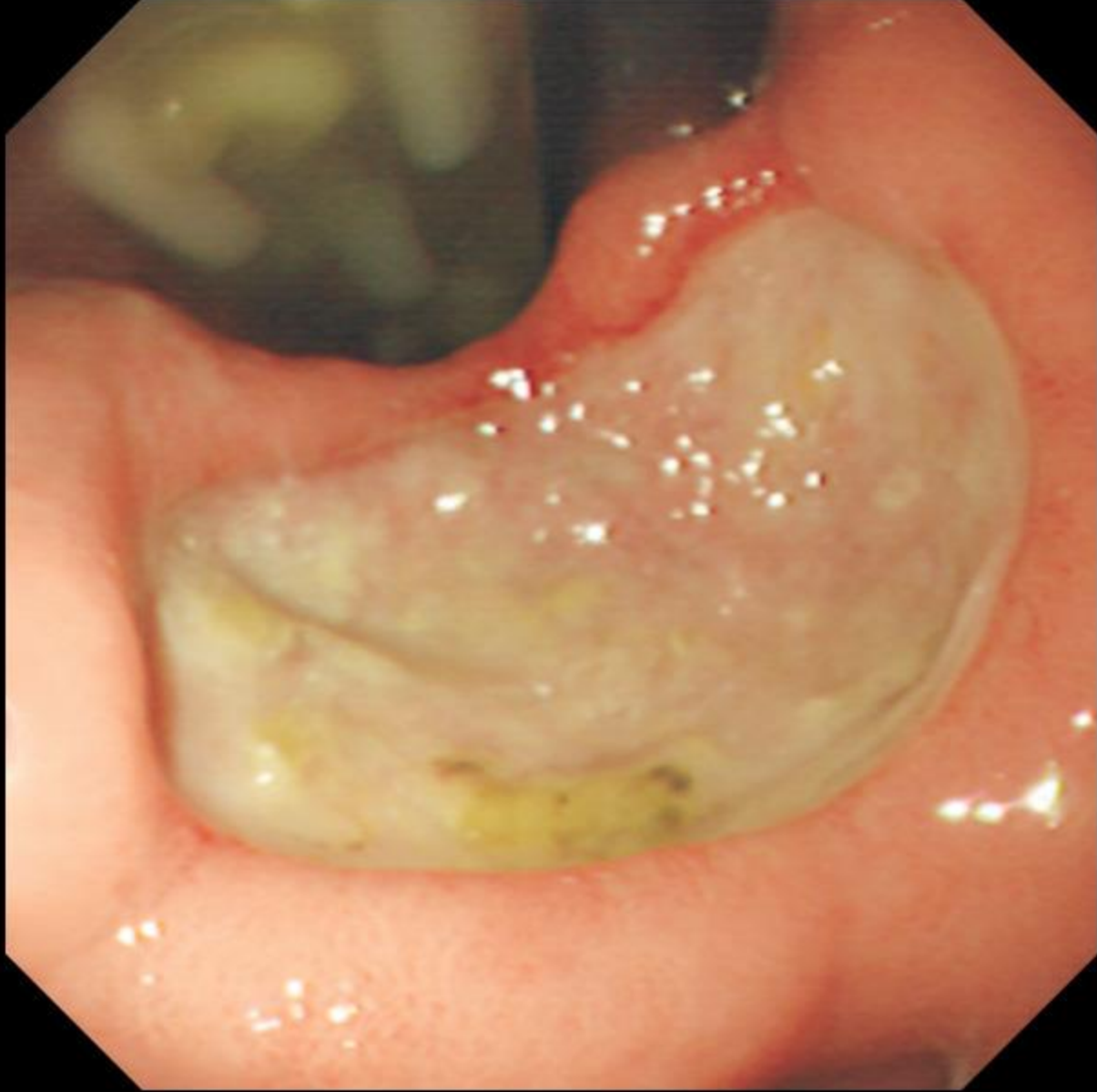


# Ulcerative colitis

© 2002 Blackwell Publishing Ltd











# Assessment of iron deficiency anaemia

- History

- Clinical examination

- Investigations in iron deficiency

- Blood tests

- Endoscopic investigations

- Imaging studies

# History

## ■ Dietary history

- Iron consumption

## ■ Upper and lower GI symptoms

- Pain, ABH, dyspepsia, blood loss

## ■ Genitourinary symptoms

- Menstrual blood loss, Haematuria

## ■ Drugs

- Aspirin, NSAIDs, Warfarin

## ■ Red flag symptoms

- Wt loss, Overt bleeding, Vomiting, Nocturnal symptoms, Pain, ABH

# Clinical examination

## ■ General examination

-Normal, Pallor, Koilonychia

## ■ Lymphadenopathy

## ■ Abdominal examination

-Normal, Tenderness, Lumps, Mass

## ■ Rectal examination

-Normal, Lump, Blood

# Parameters

- Initial stages only iron stores depleted
- Iron deficiency without anaemia
  - Normal Hb, Ferritin < 40
- Iron deficiency with mild anaemia
  - Hb 9-12 gms, Ferritin < 20
- Iron deficiency with severe anaemia
  - Hb 6-7 gms, Ferritin < 10

# Investigations for IDA in primary care

## ■ Full blood count and MCV

- Anaemia, elevated platelets, low MCV

## ■ Blood film

- Normocytic in early stages

- Hypochromic microcytic film

## ■ Haematinics

- Low ferritin



# Investigations for IDA in primary care

- Coeliac screen

  - Positive TTG or EMA

- Iron studies

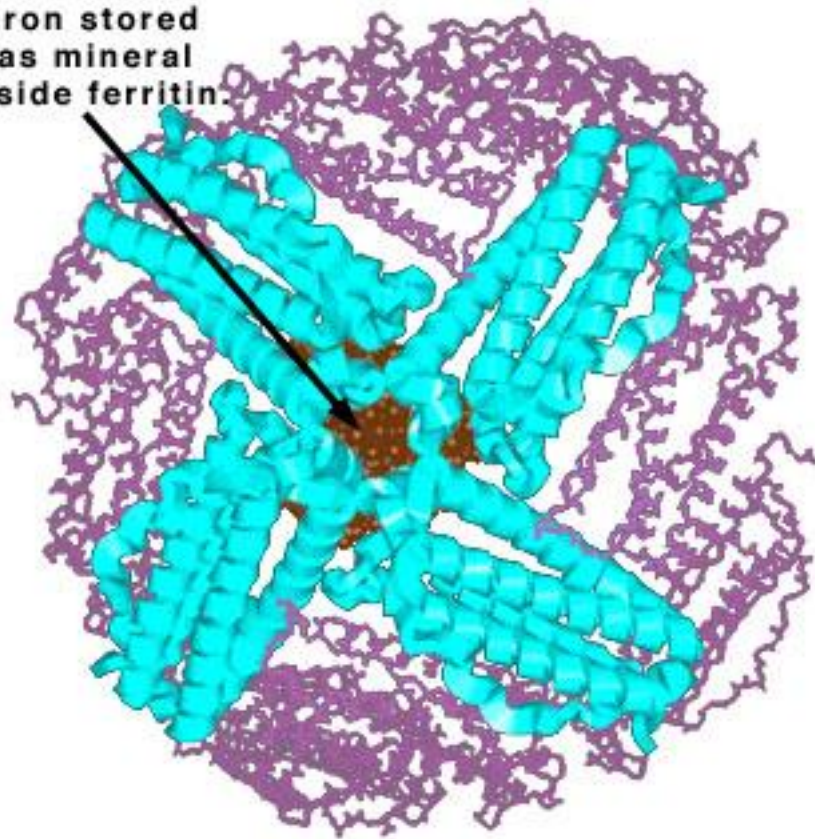
  - Low ferritin, low Iron, elevated Transferrin / TIBC

- Urine dipstick

# Iron studies

- Iron profile\*
  - Iron
  - Transferrin saturation
  - Ferritin – only biochem investigation required for initial iron deficiency investigation
  
  - \*Use for chronic iron overload

Iron stored  
as mineral  
inside ferritin.



# Iron studies and illness

<b>Disease</b>	<b>Iron</b>	<b>%transferrin saturation</b>	<b>Ferritin</b>
Iron deficiency	LOW	LOW	LOW
Chronic illness (Anaemia of chronic Disease)	LOW	LOW	NORMAL/HIGH
Haemachromatosis	HIGH	HIGH	HIGH



# Serum iron (2)

- Acute and chronic inflammation, immunisations, MI, malignancy etc – often lower serum iron
- Iron ingestion – serum iron ↑  
transferrin saturation  
100%
- Useful for iron OD/poisoning



# Other investigations

- Erythrocyte protoporphyrin
  - Increased in iron deficiency
  - lead poisoning
- Serum/Soluble transferrin receptor
  - ↑ Iron deficiency
  - Anaemia of chronic disease

# Initial investigations in secondary care

## ■ Gastroscopy and duodenal biopsies

- Upper GI malignancy, Ulcers, or sources of blood loss

## ■ Colonoscopy

- Neoplasia, Polyps, IBD, Angiodysplasia

# Further investigations in secondary care

## ■ Ultrasound abdomen / CT scan

- Blood loss from the GU tract
- Rarely bleeding from a retroperitoneal source

## ■ Small bowel imaging

- Angiodysplasia, polyps, IBD
- Capsule endoscopy
- Barium meal



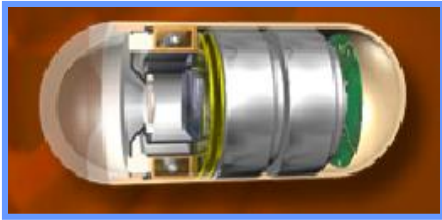
Our mission is to be the global leader in providing innovative, world-class diagnostic solutions for the gastrointestinal community.

# Angiodysplasia





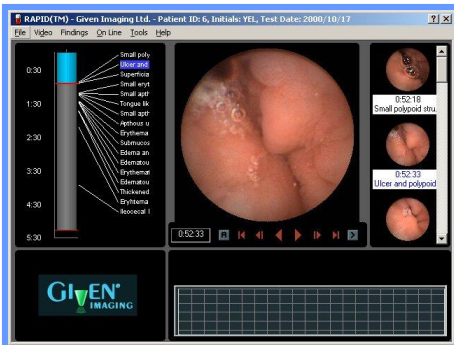
# The Given<sup>®</sup> Diagnostic System



M2A Capsule



Ambulatory data recorder

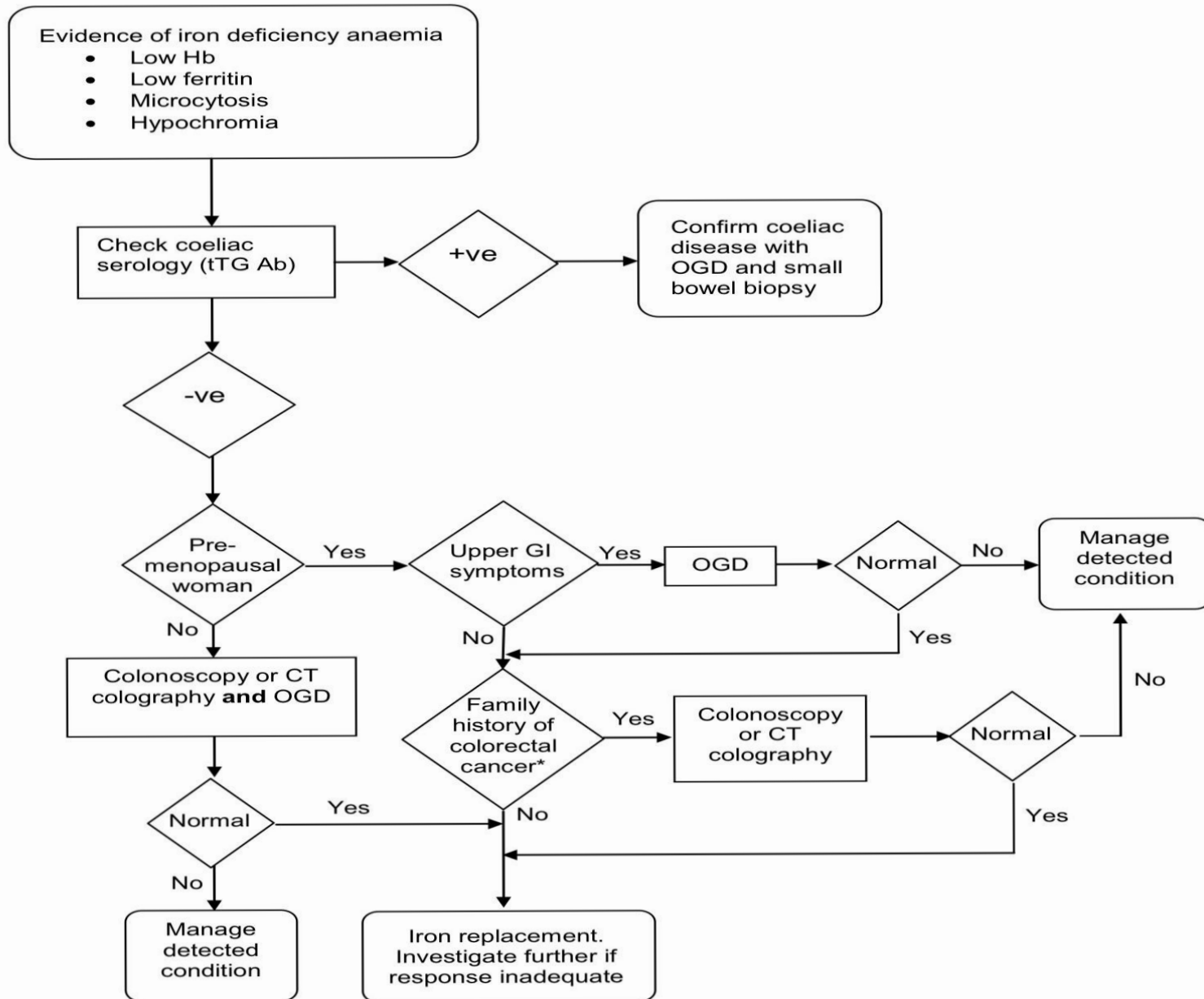


Rapid software

# **Iron Deficiency Anaemia**

## endoscopy

**By Muhammad Hanif Shiwani**  
**Consultant General Surgeon**





# Learning from Patient Journey

## Case 1

# Learning from Patient Journey

## Case 2

# Learning from Patient Journey

## Case 3

# When and whom to refer to?

- Potentially a significant pathology
- Urgent referral
- All must be assessed for investigation
  - Fitness for procedure
  - If significant co-morbidity investigate in hospital
- Referral to gastroenterology as GI tests required in the majority
- Access to Gastroenterology and Radiology

# Interactive case 2

- 30 year old female
- Permanently tired, occasional episodes of loose stool and bloating
- On OCP - regular withdrawal bleeds
- Unremarkable physical examination  
Very slim

# Interactive case 2

- Next steps?

# Interactive case 2

TFTs Normal

LFTs ALP 140 iu/L

albumin 34 g/L

A.Ca 2.10 mmol/L

PO4 0.8 mmol/L

FBC

Hb 109 g/L,

MCV 75 fL

- Next?

# Interactive case 2

- PTH                      80 ng/mL (20 – 75)
- Vitamin D              25 nmol/L
  
- tTG                      35 u/mL (0 – 10)
  
- Next steps .....



# Management of IDA

- Coeliac disease
  - Gluten free diet
- Drugs
  - Use only if necessary / Alternatives / PPI cover
- Iron supplements and monitoring
- Angiodysplasia
  - Ablation, Iron deficiency
- Polyps
  - Removal with endoscopy or surgery
- Neoplasia
  - Surgery, Palliation and referral to MDT

# IDA with normal investigations

- Address the history
- Ensure normal GI investigations
  - Gastroscopy, Colonoscopy and Capsule endoscopy
- Ensure normal GU investigations
  - USS +/- CT scan
- Trial of Iron supplements
  - 3 months and monitor Hb off supplements
- Low threshold for repeating investigations

# Iron deficiency with normal Hb

- BSG guidelines
- No clear consensus
- Always the initial stage in the development of anaemia
- Exclude Coeliac disease TTG
- Young premenopausal woman---observe
- Family history Bowel cancer/ polyps
- > 45 Investigate

# Summary

- Potentially significant pathology
- Most patients need to be investigated
- Try and establish an early diagnosis
- Referral for treatment
- Early referral

*Any Questions?*