



The Gut connection to Kidney

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Case History

47-year-old man presented with a 5-month history of

- Generalised weakness
- Anorexia
- Significant weight loss

He had been treated conservatively for stage 5 chronic kidney disease (CKDV) for the last 5 years



COURSE IN THE HOSPITAL



➤ Patient was initiated on haemodialysis through right IJV uncuffed catheter (sr.creatinine – 13.1 gm/dl)



➤ Improved symptomatically and was discharged on regular haemodialysis



➤ A month later, patient was readmitted for cuffed tunelled catheter insertion



➤ However, he developed fever within a week post catheter insertion



General Examination

- Afebrile
- Pulse rate - 110 beats/min
- Respiration rate - 20 breaths/min
- Blood pressure - 136/80 mmHg

Systemic Examination

- RS - No conducted sounds were detected on chest auscultation.
- P/A - No tenderness, signs of organomegaly or intra abdominal mass, observed on per abdomen examination
- CVS - S1, S2 heard, No murmur on auscultation
- CNS - conscious and oriented, no neurodeficit




Investigations

Parameter	Value
Hemoglobin	8.9 g/dL
WBC count	13,100/ μ L
Platelets	253,000/ μ L
ESR	<u>92mm/h</u>
CRP	<u>121</u>

Investigations

Serum biochemical examination	
Total protein	6.1 g/dL
Albumin	<u>3.1g/dL</u>
BUN	<u>96.9 mg/dL</u>
Serum Creatinine	<u>13.1 mg/dL</u>
AST	20 IU/L
ALT	18 IU/L
Na ⁺	124 Eq/L
K ⁺	4.4 Eq/L
Cl ⁻	104 Eq/L




Parameter	Value
Sr. calcium	8.1mg/dL
Sr. Phosphorous	4.51 mg/dL
Sr. uric acid	9.2mg/dL
Dengue IgM and NS1	Negative
Peripheral smear	Malarial parasites not seen on peripheral smear.



VBG	
pH	7.42
pCo2	22
HCO3	21.2

Urinalysis	
WBC's	8 to 10/ hpf
RBC's	1 to 2/ hpf
Albumin	1+
Urine culture	No growth was isolated from culture

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- In view of suspicion of CRBSI (catheter related blood stream infection),



Patient was started
on broad spectrum
antibiotics

Catheter removed

Catheter inserted
on the
contralateral side

- Despite catheter change, the patient had persistent low grade fever, generalised weakness and abdominal discomfort



Blood and
urine culture -
Negative

Cuffed
tunnelled
catheter tip
culture-
Negative

Chest Xray -
Grossly
normal



➤ In view of persistent fever and abdominal pain,

USG

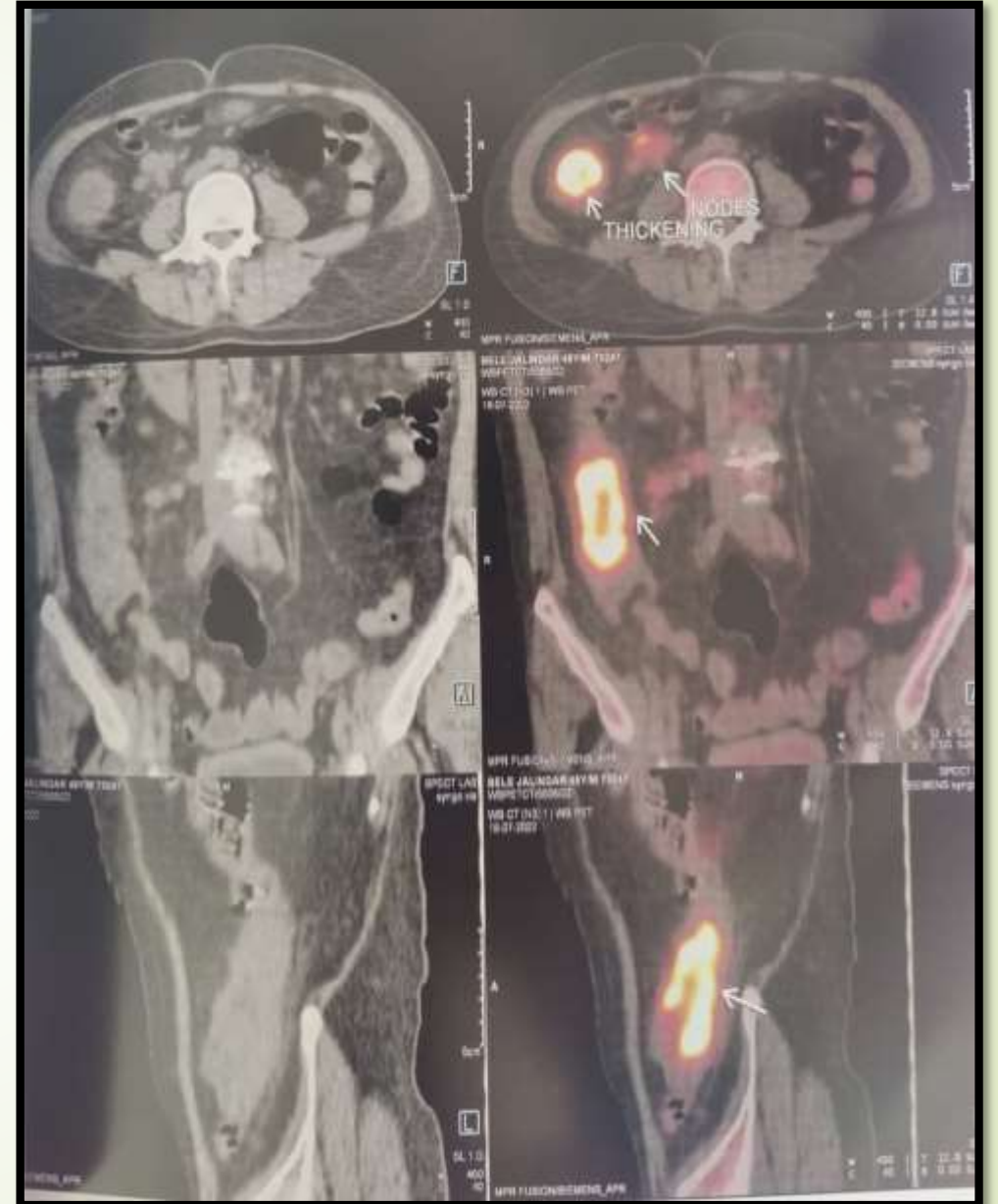
- Revealed an ileocaecal mass with lymphadenopathy

Abdominal CT scan

- Indicative of colonic cancer involving caecum, ileocaecal junction and ascending colon with lymph node involvement

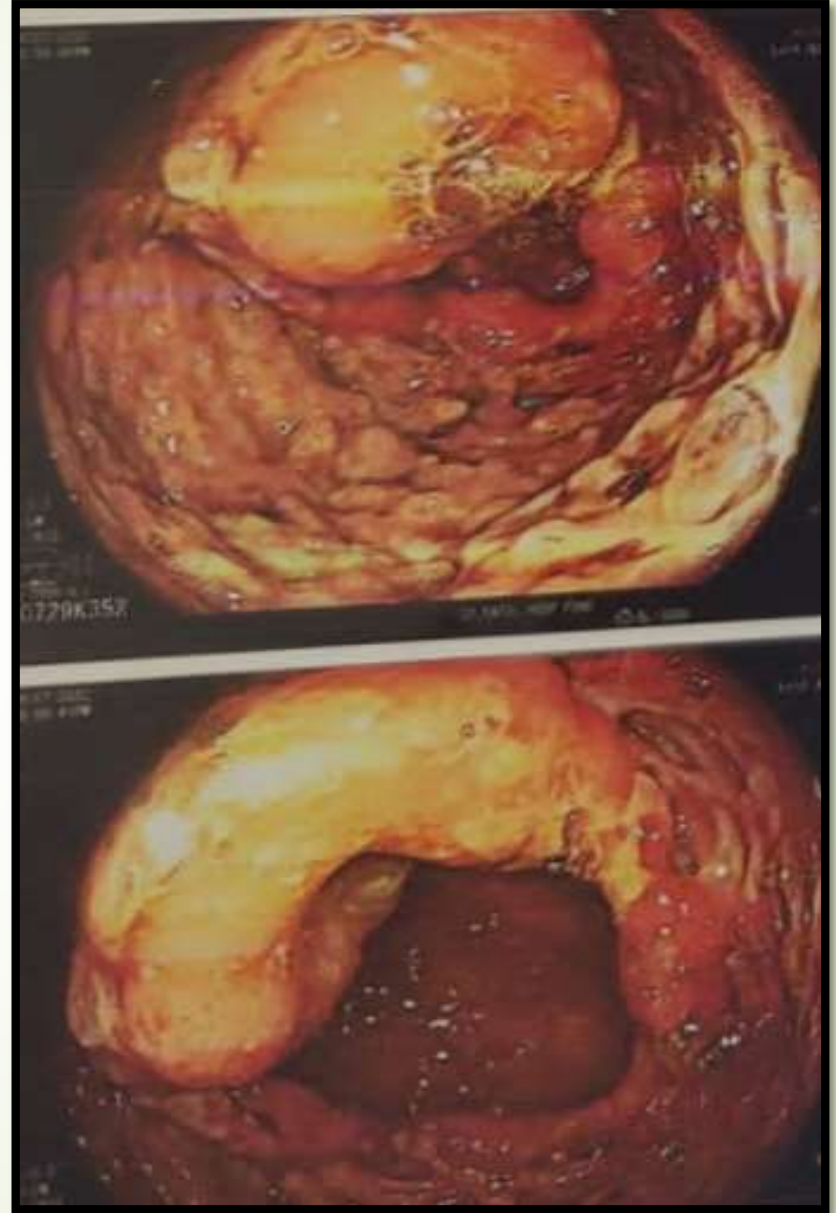
Whole body PET scan

- Increased uptake of ^{18}F -Fluorodeoxyglucose (FDG) was noted in the ascending colon and corresponding lymph nodes, in whole-body positron emission tomography (PET) scan

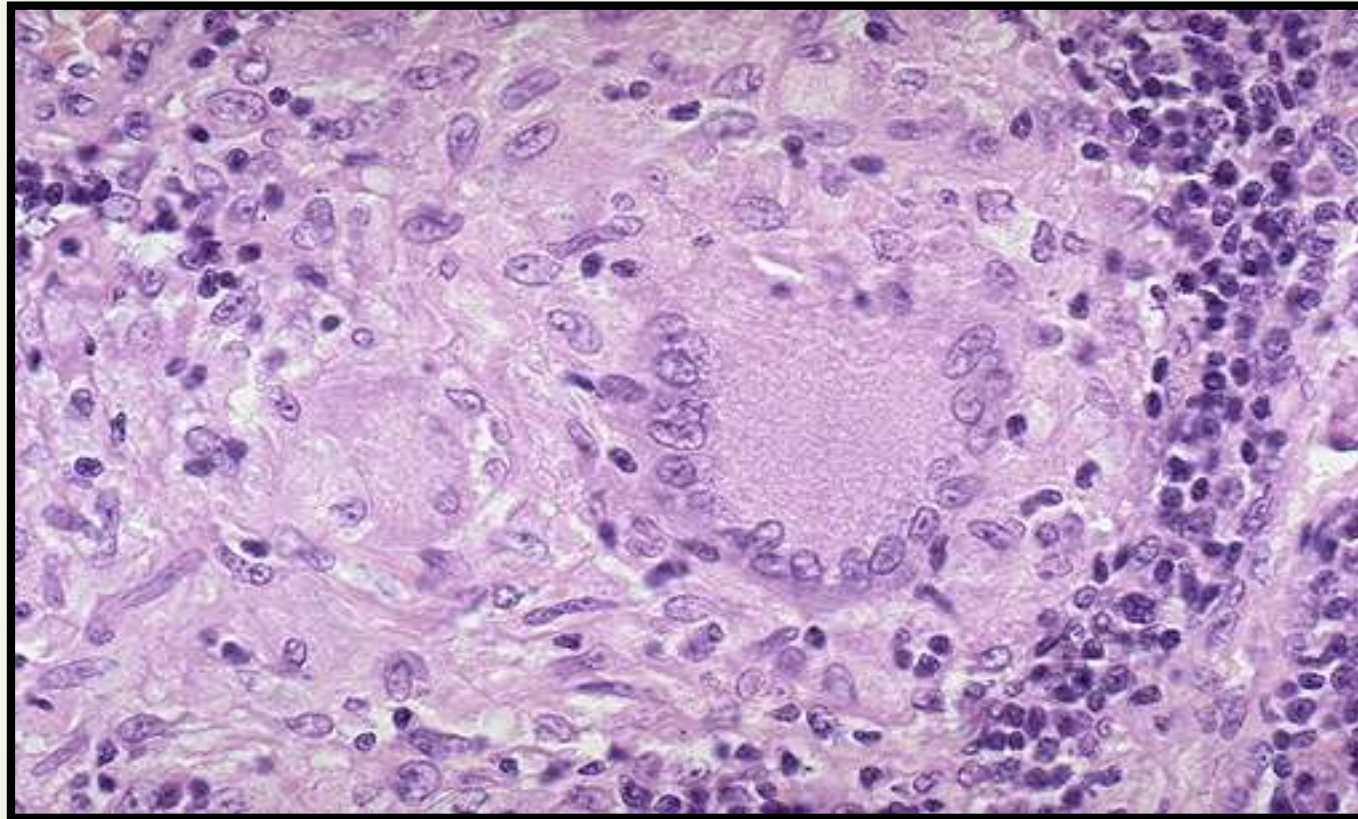


Colonoscopy


- ▶ Colonoscopy with biopsy - circumferential mass with irregular margins in the ascending colon mimicking a colonic tumor



Microscopy findings of biopsy



Hematoxylin and eosin stain of colonic biopsy shows confluent granulomatous inflammation with central caseous necrosis and peripheral macrophages involving mucosa and submucosa.

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- CB NAAT of the colonic lesion was done - Negative for *M. tuberculosis*
 - Tuberculin skin test (TST) - Negative
 - ACE levels – 102 units/L (Normal - 14 to 82 units/L)



Treatment

We initiated quadruple therapy as per category 1 regimen with: Isoniazid, Rifampicin, Pyrazinamide and Ethambutol.

The patient was discharged from the hospital after resolution of systemic symptoms and a feeling of well being.


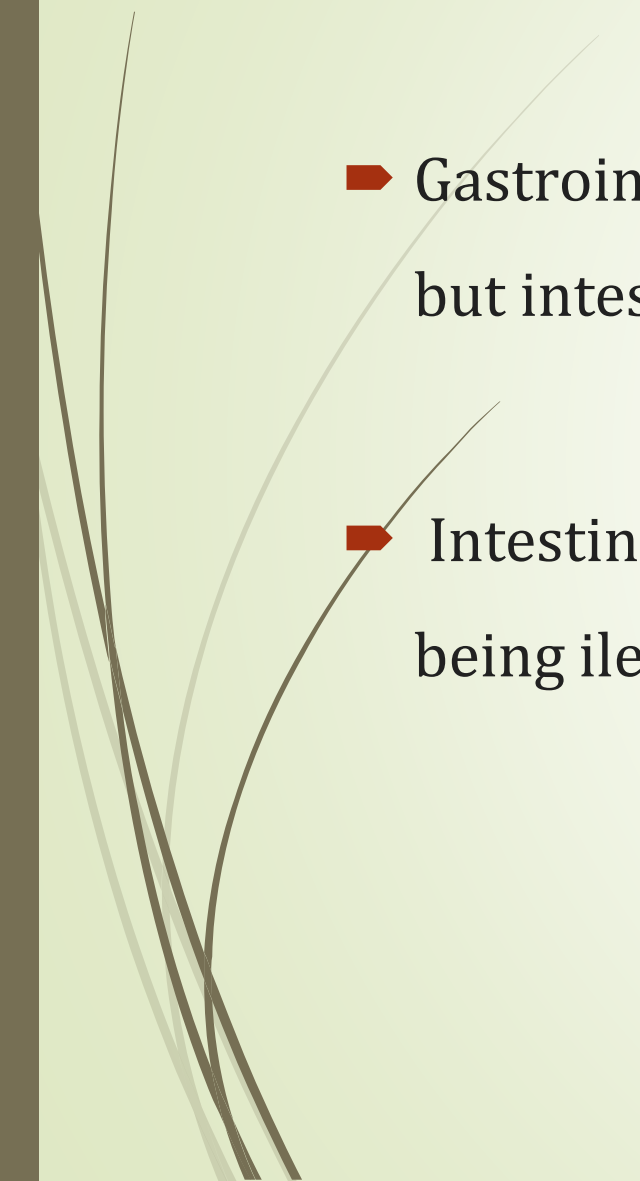



Follow up


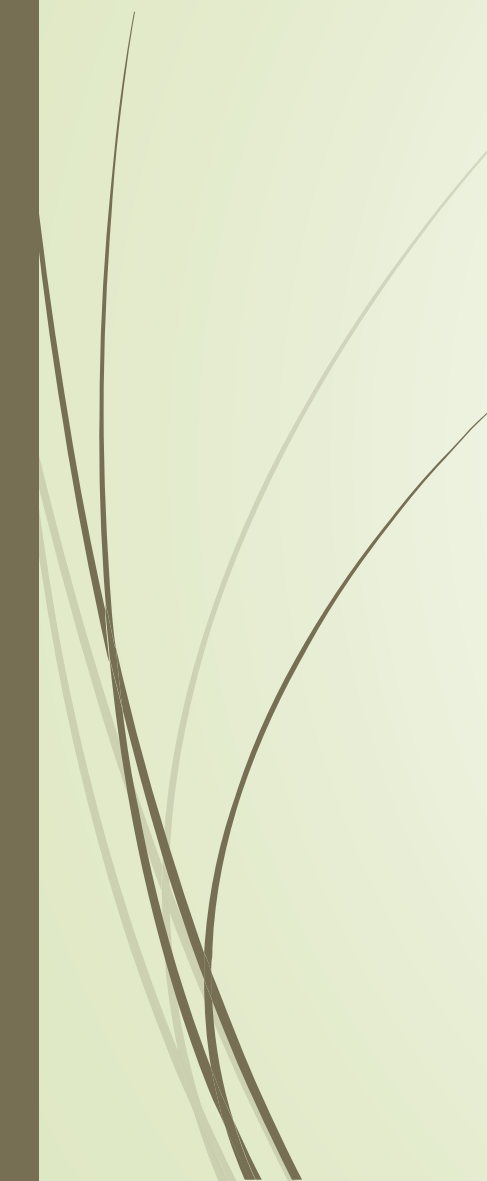
- Patient came twice for monthly follow up after starting AKT
- Patient was afebrile with no fresh complaints

DISCUSSION

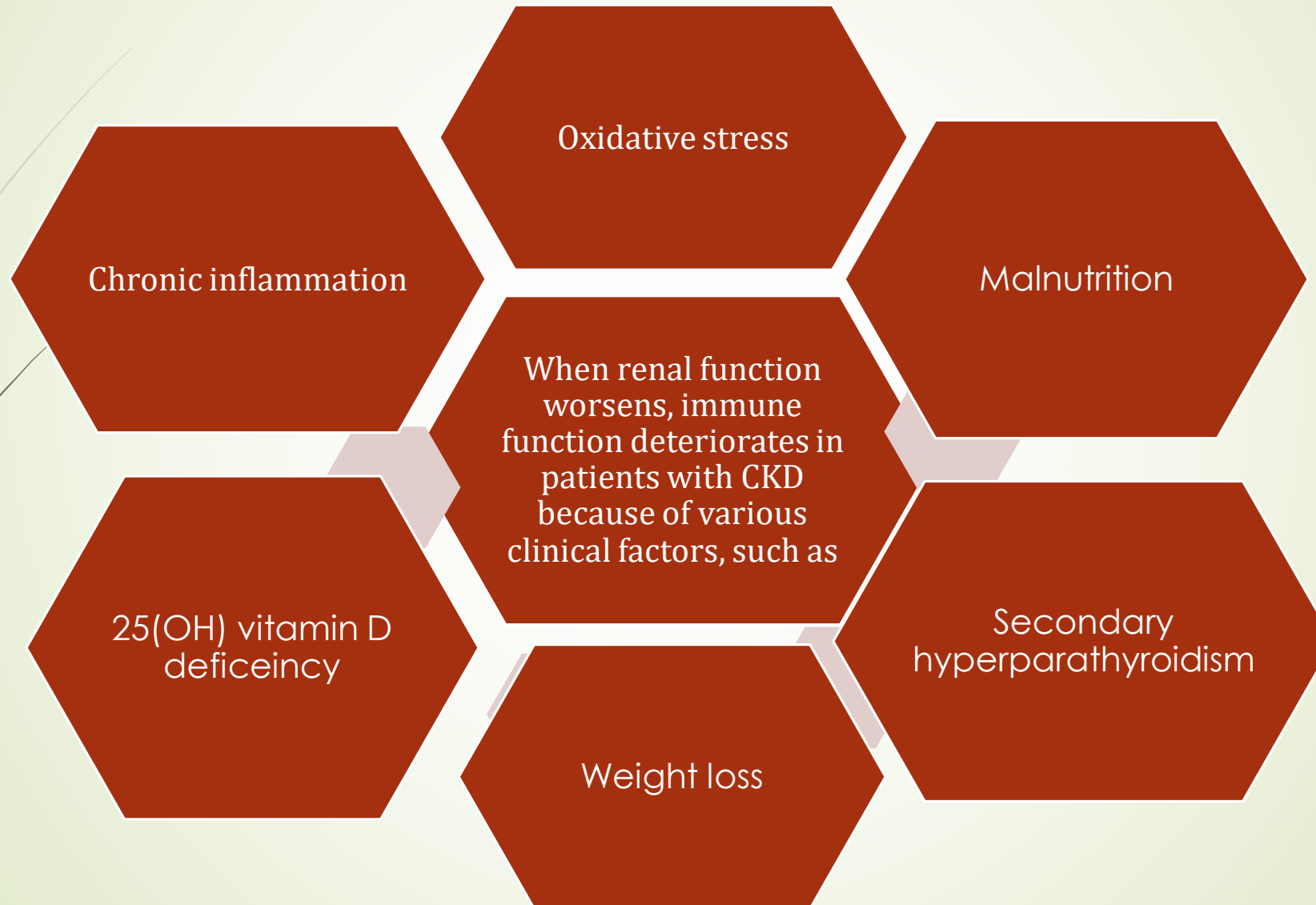



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- Gastrointestinal TB comprises 3 to 5% of the total extrapulmonary TB cases, but intestinal TB is less common in patients with CKD.
 - Intestinal TB can be hypertrophic, ulcerative or mixed and the common site being ileocecal region.

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- *M tuberculosis* invades the gastrointestinal tract and hypertrophic lesions similar to polyps or tumors, segmental ulcerations, enterocolitis, and rarely, diffuse colonic inflammation occurs and thus can cause the development of abdominal mass and abdominal distension

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- Chronic abdominal pain is one of the most frequent symptoms of intestinal TB, non-specific symptoms such as unexplained fever, weight loss, nausea, vomiting, diarrhoea, and bloody stools can also be present.
 - Therefore, it is important to differentiate from other gastrointestinal conditions.

➤ ESRD is a well known aggravating factor for TB infection.



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- ▶ Patients with CKD have a higher risk of TB due to the impairment of cell-mediated immunity, which is involved in eliminating intracellular microorganisms such as *M tuberculosis*.
 - ▶ TB is more commonly observed at the early stage of dialysis, particularly within 1 year after initiating hemodialysis , when malnutrition worsens and cell-mediated immunity declines significantly.



Risk Factors for TB in CKD patients

- Old age
- Male sex
- Diabetes mellitus
- Hypoalbuminemia
- Low body mass index
- Chronic anemia
- Ischemic heart disease
- Smoking



Summary

- To summarise, the final diagnosis of colonic TB and treatment initiation was delayed because of non-specific generalised symptoms and CRBSI that occurred after hemodialysis
- Persistence of generalised symptoms in patients with advanced CKD should raise a suspicion of extrapulmonary TB even if chest radiography results are negative

THANK YOU

