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Case Report (Open Access)

UNUSUAL CAUSE OF INTESTINAL OBSTRUCTION IN A HEMODIALYSIS PATIENT: AN INTERESTING CASE REPORT

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ABSTRACT
A 48 year old postmenopausal woman, on maintenance dialysis of eight months duration, presented to emergency department with abdominal pain and distension of three days duration. Investigations revealed active sepsis with imaging showed only gaseous distended bowel loops and hence was managed conservatively. However symptoms worsened and repeat imaging was suggestive of small bowel obstruction. Emergency laparotomy was performed and intra operative findings were consistent with Pelvic Inflammatory Disease with severely inflamed uterus and fimbriae, dense adhesions with small bowel and transverse colon with stricture. However, patient succumbed to death on the same postoperative day. This case points the need for high suspicion of Pelvic Inflammatory Disease, despite being postmenopausal status, which aids in early diagnosis and initiation of aggressive management strategies to reduce mortality.

Keywords: *Postmenopausal, Hemodialysis, Intestinal Obstruction, Pelvic inflammatory disease*

INTRODUCTION
Small bowel obstruction is a common surgical emergency. Postoperative adhesions are the most common cause of small bowel obstruction. However intraabdominal adhesions may result from other inflammatory processes such as inflammatory bowel disease, colonic diverticulitis and tuberculous peritonitis (Yao S *et al.,* 2017). Chronic hemodialysis patients with comorbidities of diabetes, hypertension, cardiac disease, are vulnerable to chronic infections and subsequent complications (Khan *et al.,* 2025).
Pelvic inflammatory disease (PID), an ascending infection of lower genital tract that results in endometritis, salpingitis and pelvic peritonitis, secondary to gonococcal or chlamydial infection, is a common pathology in sexually active women (Brunham *et al.,* 2015). The infection leads to suppurative damage to the epithelium of fallopian tube, resulting in a favourable anaerobic environment for the formation of tubo-ovarian abscesses. As infection progresses, tissues planes are lost with destruction of normal pelvic anatomy resulting in adhesion formation and scarring. Common complications of PID include chronic pelvic pain, infertility and ectopic pregnancy. PID and tubo-ovarian abscesses resulting in obstructive complications such as intestinal obstruction or hydronephrosis has rarely been described in literature (Al-Ghassab *et al.,* 2018). Here we report a rare case of 48 year old lady, on maintenance dialysis in a public sector hospital in South India, with adhesive small bowel obstruction due to PID.

CASE
A 48 yr old lady, on thrice weekly maintenance Hemodialysis (HD) since eight months, presented to Emergency department with colicky abdominal pain, abdominal distension and constipation of 3 days duration. She had her last dialysis two days before. She was passing flatus, and was not associated with fever or emesis.
She was a known Diabetic and Hypertensive in the last eight years, and Chronic kidney disease with native kidney disease being presumed Diabetic Kidney disease, on HD since eight months, with access being left brachiocephalic fistula. She had a residual urine output of less than 100ml with interdialytic

weight gain of 1kg. There were no history of any intradialytic complications and was compliant to her dialysis schedule.

She had been married since twenty six years with two children and attained menopause two years back. There were neither any history of usage of intrauterine contraceptive devices in the past nor any history of abdominal surgeries or chronic illnesses such as tuberculosis or inflammatory bowel disease. She did not give history of intake of any new medication other than her regular antihypertensives, calcium and erythropoietin.

Her vitals were normal, but with tense abdomen, and normal bowel sounds. Blood counts showed neutrophilic leucocytosis and normal biochemical parameters without any dyselectrolytemia (Table 1) and cultures were send X ray abdomen showed dilated bowel loops (Figure A) and ultrasound imaging was suggestive of gaseous distended bowel loaded with faeces, with normal peristalsis and moderate ascites.

Table 1: Laboratory parameters at admission and after 12 hours

Laboratory parameters	At admission	After 12 hours	Normal values
Hemoglobin (g/dl)	**9.2**	**9**	**10-12**
Total white cell count (cells/mm^3)	**20,000**	**35000**	**4000-11000**
Neutrophils(%)	**90%**	**95%**	**60-70%**
Serum creatinine(mg/dl)	**5.2**	**5**	**0.6-1.1**
Serum sodium(meq/l)	**135**	**132**	**135-145**
Serum potassium (meq/l)	**4**	**3.8**	**3.5-5**
Serum magnesium (meq/l)	**1.7**	**1.6**	**1.5-2.4**
Liver function tests			
Bilirubin- total(mg/dl)	**1.1**	**0.9**	**0.1-1.2**
Aspartate aminotransferase/alanine aminotransferase(u/l)	**11/13**	**14/15**	**8-33/7-55**
Albumin(g/dl)	**3.6**	**3.5**	**3.5-5**
Ascitic fluid analysis			
Appearance	**Cloudy**		**Clear**
White cell count(total (micro/l) /type(%)	**500/80**		**<250**
Glucose(mg/dl)	**80**		**70-110**
Protein (g/dl)	**4.2**		**0.3-4**
Blood culture	**No growth in 12 hours**		
Ascitic fluid culture	**No growth in 12 hours**		
Pus culture (intraoperatively collected)	**Negative for any organism**		

Patient was admitted to critical care unit and was started on broad spectrum antibiotics. She was kept on bowel rest and a nasogastric tube was inserted for gastric decompression.500 ml of paracentesis was done and was put on laxatives and supported with her dialysis. However her symptoms worsened in next

day (twelve hours after admission) with intense abdominal pain and distension accompanied by vomiting and nearly obstipation. Diffuse abdominal tenderness was present with absent bowel sounds. There was increasing leucocytosis in blood and ascitic fluid analysis reports were suggestive of peritonitis, with elevated neutrophils (Table1). Multiple air fluid levels in bowels noted in repeat X ray (Figure B). Subsequently, ultrasound and Computed Tomography (CT)(Figure C), showed multiple dilated small bowel loops of jejunum and proximal ileum consistent of Small Bowel Obstruction. She underwent Emergency laparotomy and intra operative findings were suggestive of Pelvic Inflammatory Disease (PID) with severely inflamed uterus and fimbriae, with pus flakes and multiple dense adhesions with small bowel and transverse colon with stricture and ascites of 700ml. Adhesiolysis was done (Figure D,E,F) (Pus culture however revealed no growth). But postoperatively, patient remained in shock, supported by dual inotropes and succumbed to death, in twenty-four hours.

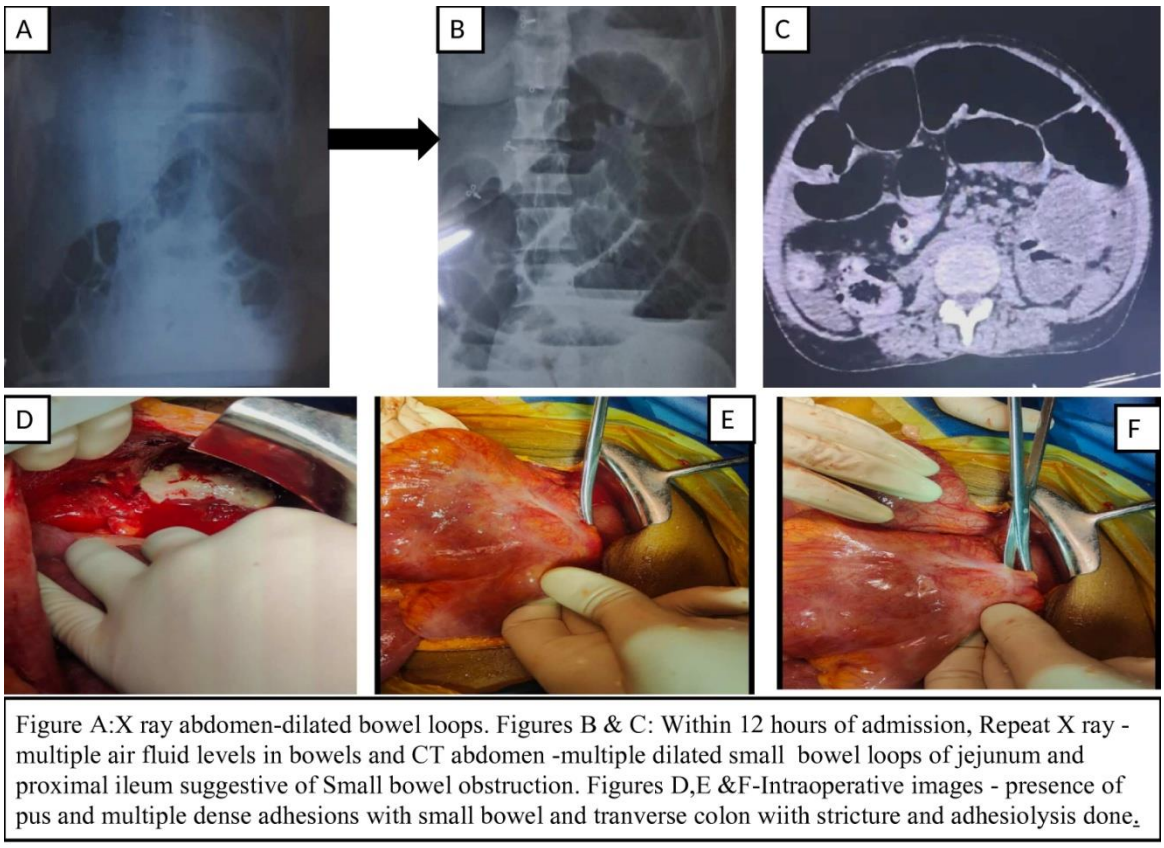

Figure A:X ray abdomen-dilated bowel loops. Figures B & C: Within 12 hours of admission, Repeat X ray - multiple air fluid levels in bowels and CT abdomen -multiple dilated small bowel loops of jejunum and proximal ileum suggestive of Small bowel obstruction. Figures D,E &F-Intraoperative images - presence of pus and multiple dense adhesions with small bowel and tranverse colon wiith stricture and adhesiolysis done.

Figures A-F: Radiology and intra operative images

DISCUSSION

Gastrointestinal symptoms in dialysis patients can be related to uremia, medications and comorbidities. Constipation, diarrhoea, bloating, abdominal pain, indigestion, nausea, vomiting and gastro-esophageal reflux are some of the commonly reported symptoms (Khan *et al.*, 2025). Abdominal emergencies while uncommon, can be serious and require prompt diagnosis and treatment.The most common causes include non occlusive mesenteric ischemia, followed by pancreatitis, peritonitis, bowel obstruction and rarely bowel infarction and spontaneous intra-abdominal bleeding. Often intestinal obstruction is encountered in peritoneal dialysis patients secondary to omental adhesions around catheter and in those with long term peritoneal dialysis with peritoneal encapsulating sclerosis (Qian *et al.*, 2015).

Here, we reported a postmenopausal dialysis lady with small bowel obstruction due to Pelvic inflammatory disease (PID), which is uncommon and not reported before.

PID predominantly affects in second and third decade of sexually active women. It is estimated that less than 2% of patients admitted for salpingitis and tubu-ovarian abscess are postmenopausal (Jackson SL and Soper DE., 1999). Indian studies showing prevalence of PID in elderly women is unknown, however a community-based study, noted a prevalence of 11.5% in postmenopausal women in Uttar Pradesh. The reported major risk factor of PID was altered cervico-vaginal flora resulting in vaginosis due to gram negative organisms like E coli and others included increasing parity, multiple sexual contacts, pelvic organ prolapse, comorbidities of Diabetes and recurrent urinary tract infections (Khan *et al.,* 2017). But obstructive complications with PID and tubo-ovarian abscesses in postmenopausal group is infrequent, making it a diagnostic challenge. One of the case reports described that tubo-ovarian abscess should be included in differential for women with intrauterine devices (Ellen *et al.,* 2024).

Several possible theories regarding mechanism of obstruction in PID are described in literature in young women. When infection from PID progresses to tubo-ovarian abscess, adjacent organs get involved. With reactive inflammation, edema and scarring, this can result in either functional or obstructive sequelae of gastrointestinal or renal tract. There have also been case reports of patients presenting with small bowel obstruction without signs of acute pelvic infection. Fibrotic adhesions from previous episodes of PID can results in mechanical obstruction (Abul Khoudoud *et al.,* 2001). PID itself, can result in failure of peristalsis of bowel, as seen in severe peritonitis or gastroenteritis, due to inflammation, causing functional obstruction or ileus (Harel *et al.,* 2003).

Some of the published case reports, revealed that diagnosis of PID is often delayed in women of reproductive age group presenting with abdominal pain, which in turn resulted in refractory symptoms and recurrent hospitalizations. In addition diagnosis of intestinal obstruction associated with PID was sub acute, owing to failure to recognise symptoms of obstruction (Harel *et al.,* 2003; Christodoulidou *et al.,* 2012). Ghassab *et al.,* noted that most patients with PID complicated by small bowel obstruction underwent surgical management, as delay in intervention significantly increased morbidity and mortality. Red flags that warrant surgery include peritonitis, hemodynamic instability or biochemical markers of bowel ischemia or radiological signs of closed loop obstruction. However, trial of conservative management can be attempted in patients without any above mentioned signs (Al-Ghassab *et al.,* 2018).

PID in postmenopausal women results with contiguous spread of infection from diseased adjacent organs, and hence do not have typical symptoms except some vaginal spotting or bleeding ,abdominal pain or alteration in bowel habits, and do not have pelvic organ tenderness, leucorrhoea or mucopurulent cervicitis. Diagnosis is rarely made preoperatively and hence land in morbid complications including colo-cutaneous fistulas, sepsis, shock, multiorgan failure and death.

Several case series reported that more than 40% of post menopausal women with PID had an associated malignancy like squamous cell carcinoma of cervix, adenocarcinoma of ectocervix, or ovarian carcinoma (McNeeley *et al.,* 1998). Extra-genital findings are primary bowel related, with diverticulitis, appendicitis, inflammatory bowel disease, diverticulosis, perforations and colorectal carcinoma, among those reported.

Laparoscopy remain the gold standard for diagnosis because it provided direct visualisation of the pelvis, as well as other intra-abdominal organs to confirm the diagnosis and to grade the extent of disease. Management is usually with broad spectrum antibiotics, acting against aerobic and anaerobic microbes and percutaneous drainage of abscess in those with failed medical therapy. However, majority require early surgical intervention due to severe systemic disease after ruling out malignancy.

CONCLUSION

Pelvic Inflammatory disease (PID) is uncommon in postmenopausal dialysis women, but it should be considered in the differential diagnosis, especially in those with abdominal pain of unclear cause. In addition to genital tract malignancies, extra-genital pathology should also be evaluated in these patients.

Laparoscopy should be considered for early diagnosis of conditions like PID and related tubo-ovarian abscess. Therefore, a high index of suspicion is warranted, with early surgical exploration and aggressive treatment to decrease associated morbidity and mortality.

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The authors state no conflicts of interest

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