Nigerian Medical Journal
NIGERIA MEDICAL ASSOCIATION
Print ISSN 0300-1652, E-ISSN 2229-774X

Case Report

Adult intussusception: A case report and review of literature of a patient seen at university of Abuja teaching hospital, Gwagwalada, Abuja, Nigeria.

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Abstract

Intussusception is a recognized cause of bowel obstruction and is significantly more common in paediatric patients. Adult intussusception is rare and usually results from a predisposing factor in most patients. These factors may include benign lesions, malignant lesions, or bowel wall abnormalities such as inflammatory bowel disease. We report on a case of a patient who presented with recurrent colicky central abdominal pain, anorexia, vomiting with occasional constipation and diarrhoea for six months. She was assessed and investigated with abdominal USS and Computer Tomography (CT) Scan, which showed features of intussusception, with telescoping of the jejunum with proximal bowel distension suggesting bowel obstruction. The patient underwent emergency laparotomy and surgical resection, and histopathology confirmed the lead point as intraluminal lipoma.

We present a case of jejuno-jejunal intussusception in an adult, which is not commonly seen. The history of recurrent colicky abdominal pain and CT abdomen, together with an abdominal ultrasound scan (USS), was important in establishing a preoperative diagnosis, and histology confirmed lipoma as a lead point. Despite the conservative approach described in the literature, surgery continues to be the only option in patients who are unstable with persistent colicky abdominal pain, vomiting, abdominal distension, and constipation; Surgery is advocated for all adult patients. Adult intussusception is not a common condition and can be difficult to diagnose, posing a diagnostic conundrum. Patients with intussusception may report a relatively long period of recurrent colicky abdominal pain that might worsen acutely following complete obstruction. Abdominal CT scan is a very useful investigation in the preoperative diagnosis of intussusception, with histopathological confirmation of lipoma as a lead point.

Keywords: Adult Intussusception; Rare Cause; Bowel Obstruction; Bowel Resection; Lipoma; A Case Report.

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How to cite: Richard SK, Sani AS, Illa GO, Kabang HA, Yawe KDT. Adult intussusception: A case report and review of literature of a patient seen at university of Abuja teaching hospital, Gwagwalada, Abuja, Nigeria. Niger Med J 2025; 66 (3): 1254-1261.https://doi.org/10.71480/nmj.v66i3.812.

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Introduction

Intussusception is commonly defined as the telescoping of a proximal part of an intestinal loop towards the distal part of the loop [1-6]. The incidence of intussusception is 1-3 cases per 1,000,000 population per year [2,7]. The condition is more frequent in children than in adults [1]. As little as 1% of bowel obstruction is caused by intussusception, with adult intussusception representing only 5% of such cases [8]. Unlike intussusception in the Paediatrics age group, which is benign in most patients, adult intussusception is secondary to an underlying pathology in up to 90% [8]. The inducing factor is a pathology within the bowel wall that serves as a lead point, which promotes invagination and telescoping [9].

Common examples of a lead point include a benign polyp, a malignant lesion, Meckel's diverticulum, and Crohn's disease. Intussusception has been categorized into 4 subtypes depending on the involved bowel parts, namely: entero-enteric, ileocolic, Colo colonic, and sigmoido rectal intussusception [10,11]. The majority of adult patients present with chronic abdominal pain and partial obstruction[9]. Ordinarily, half of those cases are diagnosed in theatre [12]. Helpful diagnostic tests include plain abdominal film, abdominal ultrasound scan, and abdominal CT scan, with the latter reported as the most sensitive investigation in the diagnosis of intussusception [1,13-16].

Furthermore, a CT scan can differentiate between intussusception with a lead point, such as a tumour, versus intussusception that lacks one. Features of increased cross-sectional diameter, bowel wall oedema, and a mass are suggestive of the presence of a lead point.

While the definitive treatment of adult intussusception is mainly surgical, the choice of reduction versus en-bloc resection is controversial among surgeons. The theoretical risk associated with resection includes the risk of intraluminal and venous seeding of malignant cells in cases of malignancy. However, the presence of a gangrenous segment precludes the option of reduction and necessitates resections [17].

Case Report

Presentation

A 65-year-old female patient presented to the University of Abuja Teaching Hospital Emergency Unit in July 2024 with recurrent colicky central abdominal pain of six months associated with nausea, vomiting, and anorexia. The pain was colicky, intermittent, and mainly on the left periumbilical area and became severe in the week before the presentation. She was admitted to temporary relief after vomiting and defecation. There was occasional constipation but no history of abdominal distension, no fever or family history of colon cancer, and no positive history of alcohol or tobacco use. She was not a well-known hypertensive or diabetic, and there was no relevant drug history.

On physical examination, she was in painful distress, mildly dehydrated, vital signs showed the respiratory rate of 16 beats/min, saturation of 99% on room air, blood pressure of 120/70mmHg, heart rate of 88bpm, and temperature of 36.8 °C.

The abdomen was full, with no scars of the previous operation, but with tenderness in the central abdomen. There was a distinct soft mass around the umbilicus, more on the left side. Digital rectal examination showed no abnormality, and the hernia orifices were intact. Bowel sounds were hyperactive. Examinations of the cardiovascular, respiratory, and other systems were unremarkable. The provisional diagnosis of acute and chronic intestinal obstruction query of colon cancer was made, and resuscitation and investigations were instituted.

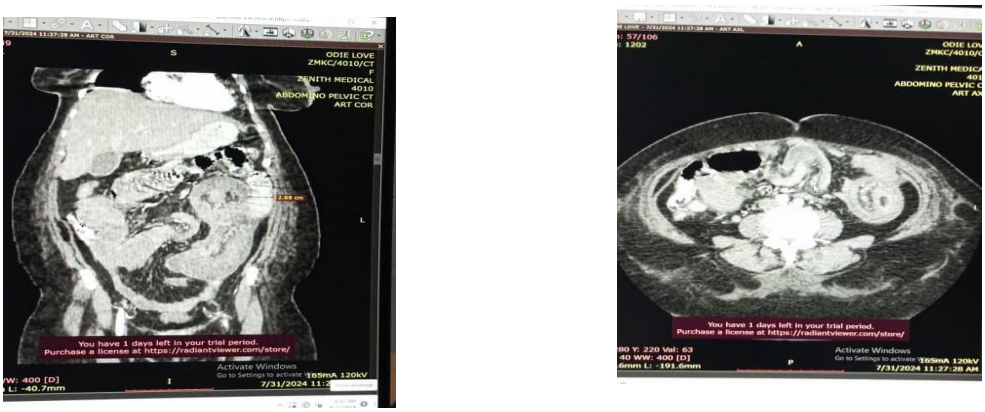
Table 1: Blood test results on admission

Parameters	Results	Range	Unit
White blood cells (WBC)	11.5	4.0-11.0	10^{x9}/L
Neutrophils	54	40-75	10^{x9}/L
Haemoglobin (Hb)	11.8	11.0-18.0	g/dl
Platelets	144	100-450	10^{x9}/L
Urea	3.0	2.5-7.5	mmol/L
Creatinine	28	Female (49-50)	µmol/L
Sodium	142	136-148	mmol/L
Potassium	3.1	3.0-5.0	mmol/L
Alkaline phosphate	171	Female (<240)	µmol/L
		Male (<270)	
Total proteinuria	10.1	5-21	µmol/L
Albumin	29	35-52	g/L
Total protein	59	66-87	g/L

The blood results show Hb-11.8g/dl, WBC—11.5 X 10*9/L, and platelets of 144 x 10*9/L.
The renal and liver function was normal except for slightly low serum albumin of 29g/L and total protein of 59g/L, respectively.

The initial management was keeping the patient nil by mouth, inserting a nasogastric tube for decompression, passing a Foley's urethral catheter for hourly urine monitoring, starting intravenous fluids, analgesia, and antibiotics.

Plain abdominal x-ray (erect / supine) showed a distended small bowel with multiple air fluid levels.
An urgent abdominal ultrasound scan depicted an oval-shaped left paraumbilical mass noted with alternating hypo/hyperechoic concentric circles with an echogenic core giving a target sign on transverse view and pseudo-kidney on longitudinal view measuring 5.4 x 5.1cm (transverse) and 12 x4.3cm (longitudinal x AP) in dimensions. It demonstrates vascularity on colour Doppler interrogation. The rest of the demonstrated loops of bowel appear mildly dilated with thickened muscular wall and increased peristalsis, while urgent CT abdomen with oral and IV contrast was arranged and showed intussusception as in Figure 1.



a. Coronal view **b. Axial view**

Figure 1 a and b: Pre-operative CT Scan abdomen showing jejunojejunal intussusception (red arrow)

The diagnosis of intussusception was made, and the patient was further resuscitated and booked for emergency exploratory laparotomy.

Procedure

The procedure was performed under general anesthesia with endotracheal intubation, and consent was obtained from the patient. Laparotomy was performed via a midline approach. Exploration was done, and the findings of a jejuno-jejunal intussusception of about 40cm at approximately 260cm from the ileocaecal valve (Figure 2). The lead point was an intraluminal mass (a polypoid lipoma) measuring 4 x 3cm extending into the mesenteric border (Figure 3 and 4); other findings were dilated proximal and collapsed distal segments of the small bowel. Liver, gall bladder, stomach, and large bowel appeared grossly normal, and there was no intraperitoneal fluid collection, and no Meckel's diverticulum was seen. The histological features of the mass were mature sheets of adipocytes with fibrous tissue (Figure 5) and with areas of congestion and hemorrhages in the bowel (Figure 6).

With the palpable lead point and eodematous segment, jejunal resection was done, and a jejuno-jejunal anastomosis was done in two (2) layers using Vicryl2/0. The abdominal cavity was irrigated with warm normal saline. Fascial closure was done using nylon 2 and skin interruptedly with nylon 2/0. A drain was used, and one unit of whole blood was transfused intra-operatively.

a. Intusscepted jejunum **b. Intussuscepted jejunum with a bluish bowel segment**

Figure 2 a and b: Showing the intusscepted jejunum.

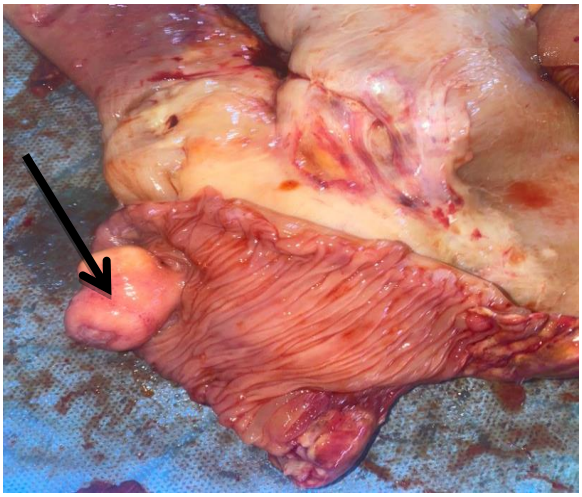


Figure 3: shows pedunculated lead point lipoma

Figure 4: shows a yellowish uniform cut surface of the polypoid lipoma mass

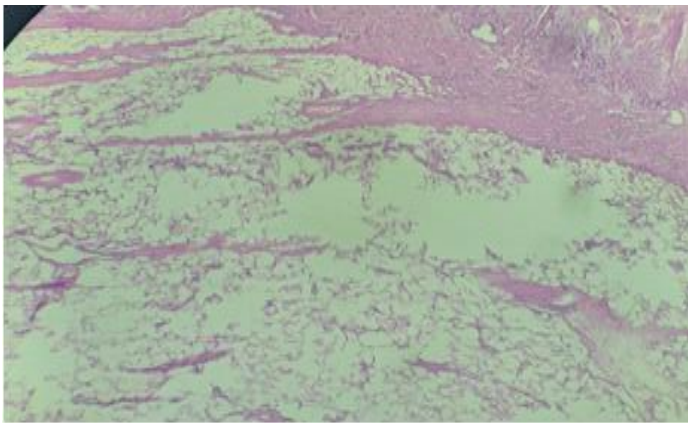


Figure 5: shows a histological section of a polypoid mass that is composed of mature sheets of adipocytes with fibrous tissues X100.

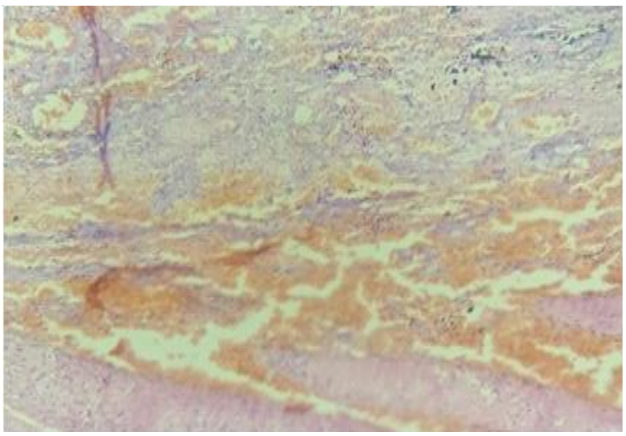


Figure 6: Shows a histological section of bowel with areas of congestion and hemorrhages in keeping with obstruction, X100

The patient made a good recovery post-operatively. She was given broad-spectrum antibiotics and intravenous fluids. She recovered uneventfully, sutures were removed on the 10th day post-operatively, and the patient was discharged to follow-up after two weeks. Gross examination showed a jejunal bowel segment that showed a thickened and pedunculated mass measuring 2x1x1 cm; the whole bowel segment measures 45x5 cm with a dull serosal surface (see Figure3). Cut open through the lumen revealed a large pedunculated polypoidal mass measuring 4 x 2.5 x 2 cm with a yellowish and greasy cut surface (see figure 4). Microscopy revealed sheets of mature adipocytes with clear cytoplasm and eccentrically placed nuclei with no atypia, which is consistent with a submucosal lipoma (see figure 5). Other areas of the bowel segments revealed areas of congestion, hemorrhages, and inflammatory cells that are consistent with small intestinal obstruction (see figure 6).

Discussion

The pre-operative diagnosis of intussusception remains challenging as the patients usually have non-specific symptoms during their presentation to medical facilities [18].

However, the history and clinical examination were not sufficient to confirm the diagnosis of intussusception, even though this was clearly an intestinal obstruction. Cross-sectional imaging with abdominal ultrasound and CT scans was extremely beneficial in establishing the diagnosis, as it showed telescoping and double lumen appearance of the jejunum, indicating small bowel obstruction with associated upstream dilatation of the small bowel.

Adult intussusception is a rare entity in patients presenting with acute abdomen and is not commonly considered among the top differential diagnoses in bowel obstruction unless proven with imaging. It is usually secondary to another pathology, mostly a malignant or benign mass, or can be due to another primary bowel wall pathology, such as Crohn's disease. Around 65% of cases are caused by neoplasms. Other reported aetiologies include adhesion, lymphoid hyperplasia, cystic fibrosis, scleroderma, celiac disease, appendicitis, pancreatitis, and rectal foreign bodies [19]. Although paediatric intussusception can present as a triad of abdominal pain, bloody diarrhea, and abdominal mass, adult intussusception can be delayed as a result ofthe non-specificity of symptoms [20-21]. However, it has been suggested that adult intussusception often manifests as recurrent/chronic intermittent cramping abdominal pain associated with non-specific signs of bowel obstruction [19] which applies to our patient.

While the symptoms and signs of a patient with intussusception are non-specific, Wang et al, have reported that intussusception presents with subacute (24.4%) or chronic (51.2%) history [20]. The patient here in presented in the same manner, which can help consider intussusception as a stronger probability in the differential diagnosis. However, other conditions may manifest in a similar way, such as irritable

bowel disease, appendicitis, and volvulus. This underscores the importance of imaging in the form of abdominal ultrasound and CT scans. This is consistent with the findings of Kano et al [10], who concluded that CT abdomen was superior to ultrasound in establishing the diagnosis and has diagnostic accuracy of nearly 100%. However, ultrasound accuracy increase to >90% when there is a palpable mass[20](which is found in 24% - 42% of cases[22]Intussusceptions associated with a lead point pathology in most symptomatic cases presenting as bowel obstruction, which is usually a benign neoplasm, and it has been shown that 65% of cases are caused by neoplasms majority being benign[10].Other reported aetiologies to include adhesion, lymphoid hyperplasia, cystic fibrosis, scleroderma, celiac disease, appendicitis, pancreatitis, and rectal foreign bodies [10]. In this index case, a benign neoplastic mass was seen that was grossly and microscopically diagnosed as a lipoma.

Conclusion

We presented the case of a 65-year-old woman with intussusception. The diagnosis of intussusception in an adult should be considered in a patient who presents with recurrent/chronic or subacute colicky abdominal pain. CT abdomen and pelvis have proved to be of high value in confirming the diagnosis.

Highlights:

- Intussusception is rare in adults and has a different pathophysiology from paediatric population.
- Clinical diagnosis can be difficult in adults, but a long history of intermittent abdominal pain may be suggestive.
- CT scan aside, abdominal ultrasound is one of the most important investigations to confirm the diagnosis.

Surgical management remains the mainstay of treatment, especially in small bowel intussusception and guiding management in the form of emergency laparotomy and subsequent histopathology diagnosis of a lipoma as the lead point and features of intestinal obstruction.

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