

# Intussusception Presenting as Intestinal Obstruction in Pregnancy: A Case Report from a Tertiary Hospital in Ghana

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**Abstract** There is paucity of scientific data on intussusception in pregnancy globally which makes it a rare clinical occurrence. The symptoms in pregnancy may mimic obstetric conditions and thus presents a diagnostic dilemma to clinicians. A high index of suspicion is therefore needed in order to establish a preoperative diagnosis. We present a 29-year old woman, gravida 5 para 4, 2 alive and 2 dead (G5P4<sup>2A+2D</sup>) at 23-weeks' 6 days gestation from northern Ghana, who was referred to Tamale Teaching Hospital (TTH) as a case of acute abdomen. Initial clinical assessment and bedside ultrasonography led to a diagnosis of intussusception. A viable colo-colic intussusception was found on open laparotomy and a left hemicolectomy was performed. This was confirmed by histopathological examination of the resected bowel. There was no identifiable lead point. This case report illustrates how good and prompt initial clinical assessment supported with imaging led to a successful outcome of acute abdomen in pregnancy in a low – middle resource country.

**Keywords:** *intussusception, pregnancy, intestinal, obstruction, Ghana*

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## 1. Introduction

Intussusception is the invagination of a segment of bowel (intussusceptum) into a distal segment (intussuscepiens), resulting in bowel obstruction and ultimately compromising the blood supply of the bowel if not attended to promptly [1,2,3,4,5,6]. It is a common pediatric surgical emergency, accounting for 95% of cases of intestinal obstruction, compared to only 5% in adults [7,8,9,10]. In children it commonly occurs during the time of weaning or following viral infections, and the lead points are mostly hyperplastic lymphoid follicles (Peyer's patches). Among adults however, 90% of the cases have a lead point, mostly neoplastic [10,17].

Intussusception is classified into 4 types depending on the parts of the bowel involved: enteric, ileo-cecal, ileo-colic (commonest) and colo-colic [1,2,18,19,20]. Intussusception in pregnancy is rare globally [11,12,13,14,15,16]. Symptoms such as abdominal pain, nausea and vomiting may mimic obstetric symptoms, so a high index of suspicion is usually needed in pregnancy [8,18,27].

The use of radiological imaging (ultrasonography and Magnetic Resonance Imaging) in confirming diagnosis of intussusception in pregnancy cannot be overemphasized [8,11,13,14]. The treatment of choice for intussusception in adults is surgical resection, unlike in children where a more conservative approach is favored [11,13,16,19,20,21,22,26,28,29].

We present a rare case of intussusception in pregnancy in a low-middle resource setting and illustrated how good clinical assessment and bedside ultrasonography led to confirmation of the diagnosis.

## 2. Case Presentation

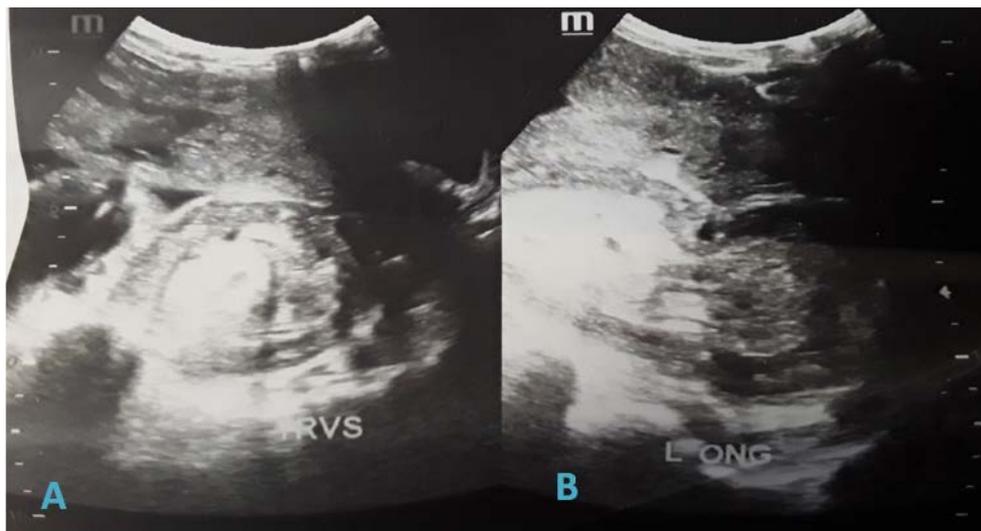
A 29-year old woman G5P4<sup>2A+2D</sup> at 23-weeks 6-days gestation presented with intermittent colicky abdominal pain of 2 months duration which became severe 2 days prior to presentation. It was associated with abdominal distension, vomiting and red currant jelly stool. There was no history of fever, retrosternal discomfort, chronic fatigue, chronic constipation, hemochezia or change in stool caliber. She visited a primary care facility when the symptoms started

but her symptoms were attributed to her pregnancy. Two days prior to presentation she reported to the health facility where she was referred to the Obstetric and Gynecological department of TTH (tertiary) on account of acute abdomen. She had no underlying medical conditions and no history of previous abdominal surgeries. She attended 4 prenatal visits and was in good health prior to this admission. She had no family history of colon, ovarian or endometrial cancer.

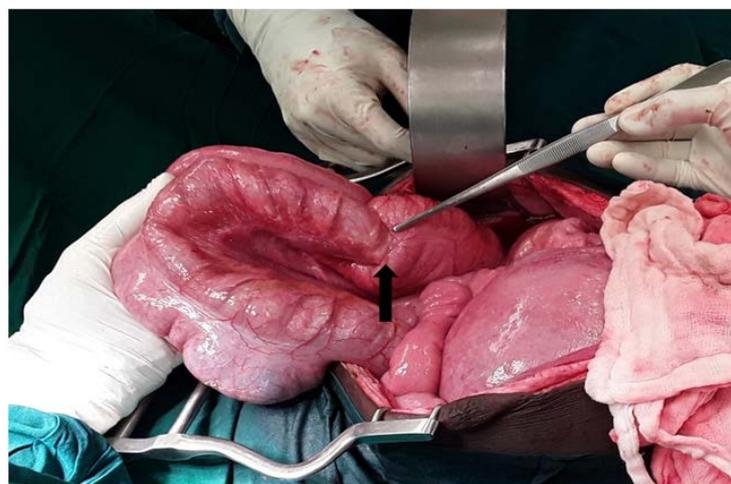
On examination, she was in pain, conjunctiva pallor (1+), anicteric and moderately dehydrated. Abdomen was mildly distended, linea nigra and striae gravidarum present, soft and non-tender, mass palpable in the left upper quadrant. The symphysis-fundal height was 24cm and fetal heart rate (FHR) was 168bpm. Rectal examination showed copious red currant jelly stool, normal sphincter tone was good and a soft mass palpated within the lumen of the rectal ampulla. The examining finger could go between the mass and rectal mucosa circumferentially. Systemic examination was normal. Bedside abdominopelvic ultrasound found a mass in the left upper quadrant showing multiple concentric rings known as “target” sign in transverse section. A longitudinal section showed multiple parallel lines known as “pseudo-kidney” sign as shown in [Figure 1](#). Ultrasonography also demonstrated a viable singleton

cyesis in cephalic presentation with adequate amniotic fluid with normal sized ovaries. Complete blood count, blood urea and electrolytes were essentially normal. A diagnosis of Intestinal Obstruction secondary to intussusception in pregnancy was made.

She was appropriately resuscitated and optimized for emergency open laparotomy. Laparotomy was performed under general anesthesia and prophylactic antibiotics through a standard midline abdominal incision. With the aid of a Balfour retractor, the peritoneal cavity was explored. The gravid uterus was inspected and retracted to examine the bowel. The operative findings were a viable colo-colic intussusception with the transverse colon and splenic flexure “telescoping” into the descending colon as shown in [Figure 2](#). The ovaries and fallopian tubes were grossly normal. The descending colon and distal third of the transverse colon were mobilized along the white line of Toldt. A standard Left Hemicolectomy with end-to-end colo-colic anastomosis was performed and specimen sent for histopathology. She was managed postoperatively with antibiotics, analgesia and fluids. Magnesium sulphate was given for tocolysis. She had an uneventful recovery and repeat obstetric scan confirmed fetal viability on postoperative day 3 and on follow up visits.



**Figure 1.** Abdominal ultrasound showing A) “target sign” in transverse section and B) “pseudo-kidney sign” in longitudinal section.



**Figure 2.** Showing colo-colic intussusception with transverse colon and splenic flexure “telescoping” into descending colon

### 3. Histopathology

**Macroscopy:** A resected 29.0cm long large bowel specimen was received. This was severely edematous, congested with hemorrhagic areas and fibrotic wall. A total of four lymph nodes were retrieved from the paracolic fat.

**Microscopy:** Sections from the bowel show a hypertrophic muscular wall with severe edema of the submucosa and serosa. There were areas of hemorrhage, vascular congestion and rupture. The mucosa was intact. Sections from the lymph nodes show reactive changes. No malignancy seen.

**Histopathological diagnosis:** Colon (Resection): Consistent with intussusception.

The histopathology report was sent to the attending surgeon in the ward. The patient was counseled on the benign outcome of histopathology report and discharged home on postoperative day 10 after removal of stitches. Follow up review showed mother and fetus were in good condition and wound healed.

### 4. Discussion

There is paucity of scientific data on intussusception in pregnancy globally thus making it a rare clinical occurrence [11,12,13,14,15,16]. It is a known cause of intestinal obstruction complicating pregnancy. Perdue et al., about three decades ago in their review of 66 cases of intestinal obstruction in pregnancy and puerperium found that adhesions (58%) and volvulus (24%) were the common causes, with only 5% being caused by intussusception [30]. The symptoms of intussusception in pregnancy may mimic obstetric conditions and may thus present a diagnostic dilemma to the physician. In this case report the patient had an initial presentation of intermittent abdominal pain and nausea for 2 months. This is consistent with the non-specific and episodic nature of presentation in adults [16,18,22,23]. Therefore, non-specific symptoms in pregnancy must always be investigated thoroughly to identify the underlying cause for prompt medical intervention. Her latter symptoms/signs of colicky abdominal pain, palpable sausage shaped mass and red currant jelly stool is known as the classic triad in intussusception. This triad is typical in children and is not often seen in adults. An enlarged gravid uterus may also conceal an abdominal mass from the palpating hand [11]. Preoperative diagnosis is difficult given the vague and episodic nature of symptoms in pregnancy [8,11,15,21,24,25,26]. A high index of suspicion is therefore needed in order to establish a preoperative diagnosis in pregnancy [8,18,27] as in this current case.

Weledji and Simo emphasized the importance of good clinical assessment in establishing diagnosis in adults [18]. Ultrasonography and CT scan are the gold standard for evaluating and diagnosing intussusception in adults [12,20,21,23,26]. In pregnancy however, ultrasonography and MRI are the safer options because of the risk of fetal abnormalities associated with use of CT scan [8,13,14,31]. However, physicians should not hesitate to use CT scan in pregnancy if the benefits outweigh the risk [11]. In low- middle resource settings as in current case and many other hospitals in developing countries, X-rays and

bedside ultrasound are the only radiological imaging tools readily available. Ultrasound is cheaper and readily available imaging tool for diagnosing intussusception [32]. Reira et al., demonstrated that after an hour long course of sonography, inexperienced physician were able to diagnose intussusception with a sensitivity of 85%, specificity of 97%, positive predictive value of 85% and negative predictive value of 97% [33]. In the current case, bedside abdominopelvic ultrasound investigation found a mass extending from the left hypochondriac to the left lumbar region. In a transverse view, there were multiple concentric rings seen which is known as the “target” sign. The mass had a hypoechoic outer layer indicative of edematous bowel wall of intussusceptiens and a hyperechoic central portion indicative of wall of intussusceptum and its mesenteric fat. Furthermore, a longitudinal view showed multiple parallel lines known as the “pseudo-kidney” sign. These 2 signs are pathognomonic of intussusception and should not be missed by sonographers. In this case, the clinical suspicion was confirmed by only ultrasonography because advanced imaging (MRI and CT scan) were not available.

The treatment of choice among adults is surgical resection [11,13,16,19,20,21,22,26,28,29]. This is because it is associated with a lead point in 90% of cases, 65% of which are malignant [10,17]. The patient had a viable colo-colic intussusception for which a left hemicolectomy was done. Histopathology found no malignancy but benign lymphoid hyperplasia. In this case, there was no identifiable lead point.

Twenty-three percent of patients with intestinal obstruction in pregnancy is complicated by strangulation [30]. The reported maternal and fetal mortality rate from intestinal obstruction in pregnancy stands at 6% and 26% respectively [30]. The timely diagnosis and surgical intervention in this case prevented strangulation and gangrene of the colon considering the precarious blood supply of the splenic flexure (watershed area). It also prevented a needless maternal and fetal mortality.

### 5. Conclusion

Intussusception is rare clinical event in pregnancy. Preoperative diagnosis is difficult and so physicians should have a high index of suspicion. Good clinical assessment is an essential tool in low-middle resource settings. The treatment of choice is surgical resection. Policy makers and hospital managers in low resource settings should make training of physicians in ultrasonography a priority. Timely surgical intervention is crucial to preventing needless maternal and fetal mortality.

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### Conflict of Interest

No conflict of interest with respect to authorship and publication of this case report.

## Abbreviations

TTH- Tamale Teaching Hospital  
 G5P4<sup>2A+2D</sup> - Gravida 5 Para 4, 2 Alive and 2 Dead  
 CT- Computed Tomography  
 MRI- Magnetic Resonance Imaging

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