

## Ileosigmoid Knotting in Pregnancy: A case Report Seen in Uganda.

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*Ileo-sigmoid knotting (ISK) refers to the intertwining of the ileum and the sigmoid colon. The incidence of ISK is not known but generally occurs in areas with high incidence of sigmoid volvulus such as Africa, Asia, Middle East, and South America. ISK is more common in adult males, particularly the old. ISK in pregnancy is not common but if it occurs, early surgical intervention is necessary to avert its associated morbidity and mortality. Normal pregnancy complaints may cloud the clinical picture of ISK and efforts to avoid radiological investigations may contribute to diagnostic delay. We report a case of a pregnant mother in her second trimester who was admitted at Mbarara Regional Referral Hospital with features of intestinal obstruction and exploratory laparotomy revealed ISK with gangrenous bowel. After surgery, she recovered very well, carried her pregnancy to term and delivered normally.*

### Introduction

Ileo-sigmoid Knotting (ISK) refers to the wrapping of the ileum around the sigmoid colon and its mesentery or vice versa. This often causes a double loop obstruction. The incidence of ISK is not known but it generally occurs in areas with a high incidence of sigmoid volvulus like Africa, Asia, Middle East and south America<sup>1</sup>. Ileo-sigmoid knotting in pregnancy is not common<sup>2</sup> but if it occurs, early surgical intervention is necessary to avert its associated morbidity and mortality. In their study, Atamanalp<sup>2</sup>, reviewed the clinical outcomes of 3 pregnant patients with ISK and compared the characteristics of these pregnant women with 16 nonpregnant women. The three pregnant patients accounted for 4.2% of 72 total ISK patients and 15.8% of 19 female ISK patients. He confirmed that ISK in pregnancy is a rare occurrence. It is generally seen in multiparous women and in the 3rd trimester.

In this review, we report a case of ileo-sigmoid Knotting (ISK) in pregnancy we encountered at Mbarara Regional Referral Hospital in Western Uganda.

### Case report

ML, 37yrs old G<sub>5</sub>P<sub>4+0</sub> at 14 WOA, was admitted on Gynaecology ward in October 2011 at Mbarara Regional Referral Hospital (MRRH) with a two days history of colicky abdominal pain associated with abdominal distension, vomiting and constipation but no history of fever, dysuria or PV bleeding. On examination she was ill-looking, afebrile, mild pallor, BP=106/74mmHg, PR=146bpm, RR=19bpm, SaO<sub>2</sub> = 94%, Wt= 51kg, girth= 79cm, Ht= 162cm. The abdomen was grossly distended, with tenderness, guarding, rebound tenderness and reduced bowel sounds. Per rectal examination was unremarkable. Other systems were unremarkable. A diagnosis of intestinal obstruction was made and surgeons were consulted. We reviewed the patient and noted the above examination findings. We came up with a diagnosis of compound volvulus.

Some of the investigations that had already been done included: Blood slide for malaria parasites and it was negative; Hb=14.2g/dl; Electrolytes (Na<sup>+</sup>=122mmol/L, K<sup>+</sup>=4.1mmol/L)

and obstetric ultrasound that confirmed that she was 14 weeks pregnant. The patient was resuscitated with IV fluids and exploratory laparotomy was done. At laparotomy, we found a bulky uterus and the terminal ileum was wrapped around the sigmoid colon which was suggestive of type 1 ileosigmoid knotting with gangrenous bowel. About 50cm of the terminal ileum and 25cm of the sigmoid colon were resected and end-to-side ileotransverse anastomosis together with end sigmoid colostomy was done. She was managed postoperatively with IV fluids, antibiotics, analgesia and blood transfusion (3 units).

Obstetric ultrasound done on the 2<sup>nd</sup> post-op day revealed a single viable intrauterine foetus. She was discharged on the 9<sup>th</sup> post-operative day and the pregnancy was carried to term. She delivered normally a baby girl, 2.7kg at MRRH. She came for colostomy closure seven months after delivery and her baby was in good health.



**Figure 1.** Patient's colostomy site seven months after delivery



**Figure 2.** Mother and her baby seven months postpartum

## Discussion

In ISK, bowel loops involving the ileum and sigmoid colon are intertwined together causing bowel obstruction. This leads to strangulation and thrombosis of vessels which results in ischaemia and gangrene. Bacterial translocation to the peritoneal cavity causes peritonitis. Endotoxins are released into circulation leading to shock<sup>1</sup>.

Some of the predisposing factors to ISK include: hyper-mobile bowel with elongated mesentery and a narrow base; relaxed abdominal wall may predispose to bowel torsion; consumption of high bulk diet in the presence of empty small bowel; adhesions; internal hernias; malrotation of the gut; and Meckel's diverticulum<sup>1, 5</sup>. In this patient, the relaxed abdominal wall due to the high parity may have been a predisposing factor. ISK can be categorised into 3 types. In type 1, the ileum revolves around the sigmoid colon. In type II, the sigmoid revolves around the ileum while in type III, the ileocaecal segment revolves around the sigmoid colon. However, in some cases of ISK, it may be impossible to determine the revolved segment and this is referred to as the undetermined type<sup>1, 5</sup>.

Normal pregnancy complaints may obscure the clinical picture of ISK and efforts to avoid radiological investigations may contribute to diagnostic delay. Symptoms include: colicky abdominal pain; abdominal distension; constipation; and vomiting. Clinical signs include: asymmetrical abdominal distension; visible peristalsis and increased or reduced bowel sounds. If the gut is gangrenous, there may be tenderness, guarding, rebound tenderness and melanotic stools per rectum<sup>2,4</sup>. The presentation of our patient was in line with the above mentioned features.

Specific investigations for ISK include: plain erect abdominal radiograph which may show dilated sigmoid colon with multiple small intestinal air-fluid levels; Barium or water soluble contrast enemas may show obstruction in the lumen of the sigmoid but they are contraindicated in patients with peritonitis, bowel perforation and gangrene; Abdominal CT may show twisted and dilated sigmoid with whirled sigmoid mesentery as well as twisted and dilated small gut; Flexible sigmoidoscopy may show spiral sphincter-like twist of the mucosa but it does not give any information about the small bowel<sup>1</sup>. However, these investigations were not done in our patient since she had obvious features of acute abdomen that would warrant exploratory laparotomy. Furthermore, some of these radiological investigations were avoided because they are risky in pregnancy. Besides, we did not have a functioning CT or endoscopic facilities in place.

Management of patients with ISK involves adequate fluid resuscitation and correction of electrolyte derangements, placement of a nasogastric tube, nil per os, and intravenous broad spectrum antibiotics. During emergency laparotomy, untwisting the knot is difficult and there is risk of bowel perforation. Thus en bloc resection of the gangrenous bowel is recommended. Entero-enterostomy and primary anastomosis of the sigmoid or colostomy may be performed<sup>1, 2, 3, 5</sup>. In our patient, we resected the gangrenous terminal ileum and sigmoid colon; and then performed ileotransverse anastomosis plus Hartmann's procedure. In non-gangrenous cases, one may carefully untwist the knot and perform a volvulus preventing procedure (such as mesopexy or mesoplasty) or do resection and primary anastomosis<sup>1, 2, 3, 5</sup>.

## References

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