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Case Report

Early Puerperium Gangrenous Sigmoid Volvulus: Case Report

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Abstract: Sigmoid volvulus is the third most common cause of colonic obstruction. Men and women are not affected equally and some cases have been reported to occur during pregnancy [1, 2]. The current literatures are still devoid of the cases that occur soon after delivery in the early puerperal period. We present a 37 years' old female who was brought to St. Francis Regional Referral Hospital (SFRRH) as a referral from nearby health Centre with absolute intestinal obstruction that had an acute onset just one day after her non-eventful spontaneous vertex delivery, she was brought to us on the second day course. On examination she was ill looking with a nasogastric tube insitu that was draining bilious fluid. Her abdomen was grossly distended, hyper-tympanic with an empty rectum on digital rectal examination. She had hypokalemia that was corrected prior surgery and the plane abdominal x-ray showed a gaseous distended colon with a typical coffee bean sign. Intraoperatively a mega distended and a gangrenous sigmoid colon was laying on the rest of the visceral – twisting in a 360^0 clockwise direction. A whole of the sigmoid colon was gangrenous of which a total sigmoidectomy was done followed by closure of the rectal stamp and its attachment to the anterior abdominal wall. The lateral to medial descending colon mobilization was done that culminated into placement of the end colostomy. Though noticed and reported during pregnancy, an attention should also be paid to those patients presenting with such obstruction soon after delivery on the early puerperium, this will facilitate early diagnosis and intervention so as to prevent undesirable complications as in the case of this patient.

Keywords: Sigmoid Volvulus, Early Puerperium, Case Report.

BACKGROUND

Volvulus is termed as a number three cause of intestinal obstruction worldwide with the sigmoid colon being the commonest anatomical part that is involved [3]. It has a slight male predilection and hence men and women are not affected equally [4, 5]. Some cases have been reported during pregnancy which sometimes pose a diagnostic delay especially in the third trimester as early presentations might be conflicted with the normal course of the pregnancy [2]. This diagnostic delay is mainly due to low clinical suspicion; however, the radiological modality remains the same; for a plane abdominal x-ray is normally enough to depict the pathology [5, 6]. While its occurrence soon after delivery is yet to be reported in most of literatures; We here then present this 37-year-old of age patient who developed symptoms and signs of an absolute colonic obstruction a day after her spontaneous vertex delivery as attended and managed at St. Francis Regional Referral Hospital (SFRRH) - a regional referral and a teaching hospital for St. Francis University of Health and Allied Sciences (SFUCHAS), Morogoro – Tanzania.

CASE PRESENTATION

A 37 years old female 2 days' post spontaneous vertex delivery was brought to SFRRH-Emergency department as a referral from a nearby health Centre as she presented with generalized abdominal pain that was progressive associated with abdominal distension which was preceded by absolute constipation that culminated to a markedly copious vomiting having bilious contents. However, the patient reports to have experienced significant abdominal pain after her spontaneous vertex delivery that was initially thought to be associated with early post-delivery symptoms with no thoughts of it being a surgical abdomen. The progress of her presentations characterized by an increased pain, more episode of vomiting with a massive abdominal distention brought her into attention and hence referred to our facility for an appropriate surgical intervention.

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On arrival at our facility, she was generally an ill looking patient with a nasogastric tube and urinary catheter insitu draining bilious fluid and clear urine respectively. She was not pale, neither jaundiced nor cyanosis, blood pressure was 123/76mmhg, tachychardic with a pulse rate of 117 beats/minutes and she was tachypneic with a respiratory rate of 23 breaths/minute. She had a normal body temperature of 36.7 degree Celsius. Systemically, she had a massive distended abdomen, there was a hyper-tympanic note on percussion throughout the abdomen, no bowel sounds heard on auscultation with an empty rectum on digital rectal examination.

Abdominal x-ray revealed a distended gaseous large bowel with a typical coffee bean sign giving the final impression of sigmoid volvulus being the mechanical cause of obstruction **(Figure 1).** Full blood picture results showed other normal parameter with exception to the white blood cells where she had leukocytosis of 15.02 x 10E9/L with a mild neutrophilia of 8.0 x 10E9/. Electrolyte panel had a hypokalemia of 2.7 mmol/L, renal function tests and other baseline investigations portrayed normal findings. She received about 4 liters of crystalloids and the hypokalemia was managed at the EMD then patient was prepared for emergency laparotomy.

Following an extended midline incision an abdominal wall was opened to find a mega gangrenous sigmoid colon sitting on the rest of the viscera's **(Figure 2)** which after being delivered to the incision it was noticed to involve a whole of the sigmoid colon down to the colorectal junction **(Figure 3).** A well contracted involuting uterus was also seen with no obvious abnormalities. Total sigmoidectomy was done followed by anchoring of the rectal stump to the anterior abdominal wall. Lateral to medial mobilization of the descending colon was done as it culminated with the placement of the end colostomy (Hartman's procedure). Peritoneal lavage was done with 4 liters warm 0.9% saline, closed drainage placed and the abdomen was closed in layers. Patient was sent back to the ward for post-operative care. Stoma started to function on day 2 post surgery and she stayed in the ward for 5 days where she was discharged for serial clinical follow-up as an outpatient. Stoma was closed 2 months' latter where she had a successful convalesces, no any complaint.

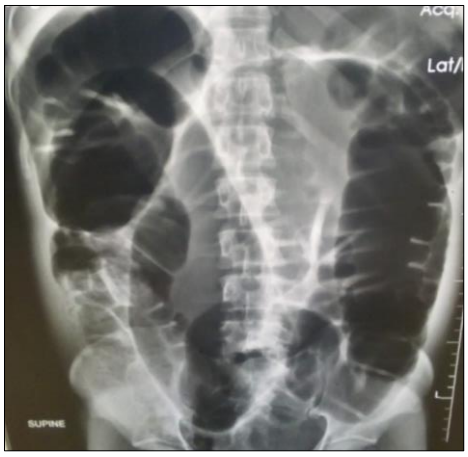

Figure 1: A plane abdominal x-ray showing dilated and gaseous large bowel with a typical coffee bean sign

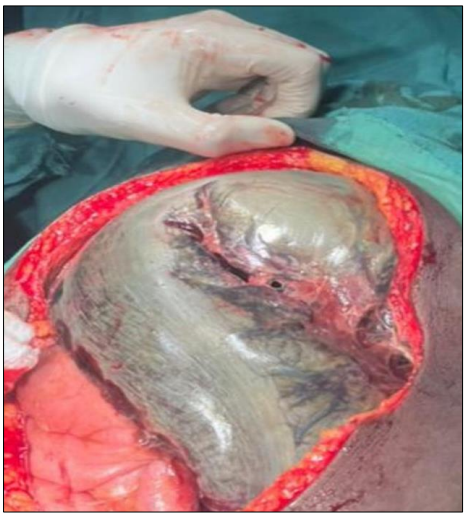

Figure 2: A mega gangrenous sigmoid colon sitting on the rest of the viscera's, just after opening up of the abdominal wall

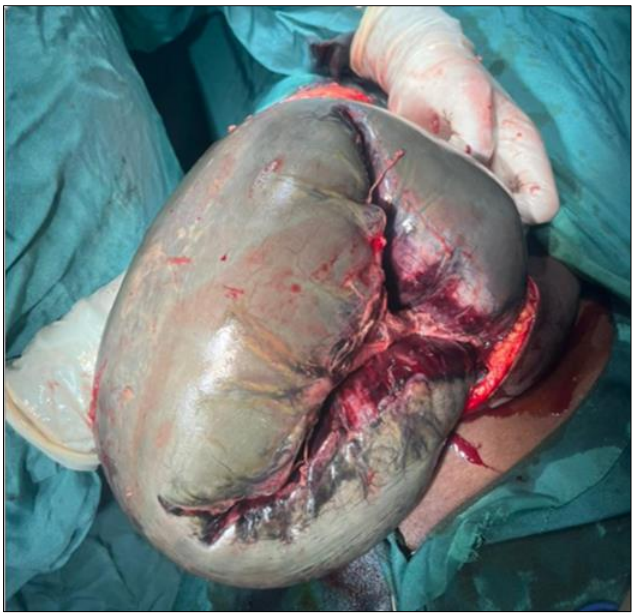

Figure 3: Gangrenous part delivered out with a total sigmoid involvement twisted in a 360^0 clockwise direction

DISCUSSION

The twisting of the intestinal loops along itself and the accompanying mesentery is termed as volvulus. Anatomically, this commonly involves the cecum and the sigmoid colon of which the latter is commonly depicted to nearly 80% of all volvulus [7]. Sigmoid volvulus has a slight male predilection commonly affecting the older ones at their 7^{th} decades of life [8], though some cases have well been documented to occur in young adults [5]. In women, multiple cases have been reported during pregnancy especially in the third trimester as the mobile sigmoid is more prone to be displaced by the enlarged uterus [2]. The literatures are devoid of post-delivery sigmoid volvulus as the expected early puerperal course might obscure its presentation.

This patient started to present with abdominal pain that was considered being the normal course of post-delivery period until the severity peaked up associated with massive distention and absolute constipation. No special pattern of presentation is expected for sigmoid volvulus in such patients as compared to the others who commonly presents with constipation, abdominal pain, asymmetrical abdominal distension and vomiting which commonly presents late [9], which entails that; the degree of suspicion should be raised by any exaggerated acute abdominal presentations after delivery. This is because the duration and the degree of mesenteric twist has shown to determine the severity of ischemia with the mortality rate of up to 11% [10].

As in this case, Plain abdominal x-ray is normally enough to make the diagnosis with features that are depicted in any other types large bowel obstruction. However, some special features such as coffee bean sign with an empty rectum can exceptionally be seen in sigmoid volvulus and hence warrant its diagnosis. In some stable patients, Fluoroscopy with a water-soluble contrast can be done showing bird beak sign which describes the diagnosis. Advanced investigations like Computed tomography (CT scan) can occasionally be used to delineate the diagnosis especially if the sensitivity of the other modalities is in question [11].

The common approach to management ranges from endoscopic detorsion, Resection with primary anastomosis and Resection with temporary colostomy placement. Endoscopic detorsion has been considered as the temporary measure to those stable patients who presents with volvulus without peritonitis or other features suggestive of luminal perforation. Recurrence rate ranging from 30 – 90% has been reported in different studies rendering many centers to prefer performing surgery on elective bases after any successful detorsion [12]. Resection with primary anastomosis is recommended for patients with uncomplicated volvulus which is less edematous and not gangrenous, however; resection and primary anastomosis can safely be attempted to some patients with less complications and short hospital stay. Temporary colostomy placement is still a common and useful alternative for those patients who already presents with gangrene either with or without perforations so as to prevent incidences of anastomotic leak, peritonitis, enter cutaneous fistula and systemic sepsis as the immediate complications [13]. Surgery can become extensive as seen in the case of this patient where there was a total sigmoid involvement that necessitated for mobilization of the descending colon so as to have a grasp of enough proximal stump for exteriorization.

CONCLUSION

This case study emphasizes how crucial it is to watch out for sigmoid volvulus as an early puerperal period cause of mechanical colonic obstruction. Since the modality of definitive management remain the same,

early diagnosis can then impeccably prevent untoward complications and outcomes.

Ethical Consideration:

Written informed consent was obtained from the patient for publication of this case report with its accompanying images. This case report was approved by Joint SFUCHAS/SFRRH Research, Ethics and Review Committee.

Availability of Data and Materials: Not applicable

Competing Interests: The authors declare no conflicts of interests

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Author's Contributions:

SJ and IM participated on the management of this patient; SJ prepared the first draft of this original manuscript as reviewed by FM. Finally, all authors agreed on the final submission.

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