Meckel's Diverticulum: A Band of Cacophony in Pregnancy

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***Abstract** : Symptomatic Meckel's diverticulum is a rare entity in pregnancy. The clinical presentation is variable and preoperative diagnosis is hampered by the various anatomical and physiological changes of pregnancy that can obscure serious underlying intra-abdominal pathology. A 30 year old $G_3P_2L_2$ presented in the emergency of Rajindra Hospital, Patiala in her second trimester with pain in right flank for 3 days. Pain was acute in onset, intermittent & moderate in intensity without any radiation. Her LMP was 13th June 2014 &EDOD 20th March 2015.Past menstrual history was regular, painless with moderate flow.Pulse rate was 100/minute. She was normotensive but dyspnoeic. Abdomen was distended & there was marked tenderness in right flank. Hb was 10gm%.Ultrasonography showed 24wks intact pregnancy with adequate liquor & small amount of fluid in between few dilated gut loops. There was no retroplacental clot & no adnexal mass. By evening,abdominal distension increased & the pulse & respiration also worsened. She was taken up for immediate laparotomy. Peroperativemeckel's diverticulum was found to be entrapping the gut & causing subacute intestinal obstruction. The meckel's was resected and continuity of gut restored. Postoperative period was uneventful & she was discharged on 10th postoperative day. The incidence of acute abdomen during pregnancy is 1 in 500 pregnancies. High index of suspicion is required to diagnose such cases, as prompt diagnosis and appropriate treatment is imperative to prevent high rate of maternal and foetal morbidity and mortality.*

INTRODUCTION

The Meckel's diverticulum (a true diverticula) is the most common congenital abnormality of the gastrointestinal tract, occurring in 0.3% to 4% of the general population[1]. It is located on the antimesentric border of ileum 2 inches in length, 2 feet away from the ileocaecal valve. Most common presentation is before the age of 2 thus following rule of 2. It commonly contains two types of ectopic tissue-gastric (75%) and pancreatic (15%) rarely colonic mucosa. It occurs with equal frequency in both sexes and is usually asymptomatic. However symptomatic meckel'sdiverticulum requiring operation is more common in males than in females.(3:1)[2]

Most patients who develop symptoms are younger than 10 years and complications occur more frequently in male children under 2 years of age. While bleeding is the most common complication in children, intestinal obstruction seems to be the most common complication in adult age group[1]. Despite its rarity, MD should always be considered in the differential diagnosis of unexplained acute or intermittent abdominal pain, nausea and vomiting, rectal bleeding, peritonitis, or obstruction in the older age group because it can cause significant mortality and morbidity.

During pregnancy, Meckel's diverticulum can have serious consequences. The clinical presentation is variable and symptomatic Meckel's diverticulitis is rarely reported. The diagnosis is hampered by various anatomical and physiological changes of pregnancy that can obscure serious underlying intra-abdominal pathology. There is a high rate of perforation due to delayed diagnosis and surgical intervention. Our report and review of the literature suggest that a high index of clinical suspicion can lead to earlier diagnosis and help to keep maternal and fetal morbidity and mortality to a minimum[3]. Prompt surgical intervention is important.

Hereby, a case report of a patient with acute abdominal catastrophe, and because of its rarity, difficulty in establishing a diagnosis,is presented.

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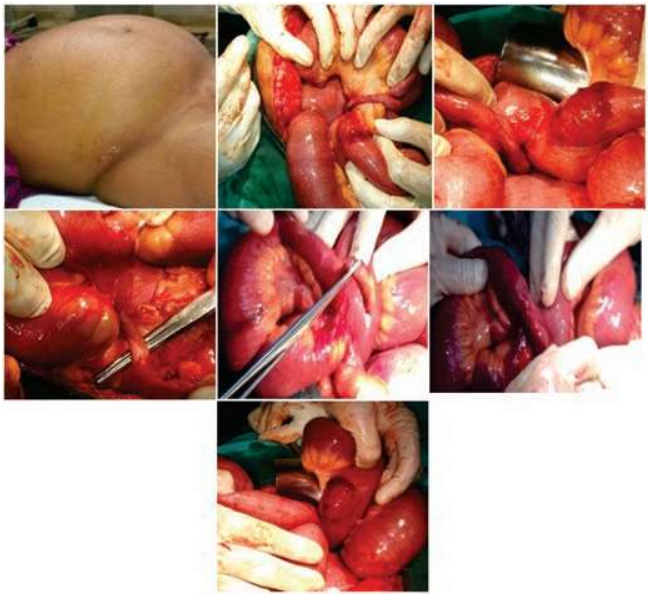
Received on 02.01.15** **Accepted on 21.02.15

CASE REPORT

A30 year old $G_3P_2L_2$ presented in the emergency of Rajindra Hospital, Patiala,in her second trimester with worsening abdominal pain in right flank for the last 3 days & distension. Pain was acute in onset, intermittent & moderate in intensity without any radiation. There was no relation with meals or motion. There was no history of chills, fever, vaginal bleeding or leaking. She had normal bowel habits with no history of bleeding per rectum. Past menstrual history was regular, painless with moderate flow. The past medical history too was unremarkable and pregnancy uneventful.She was afebrile. Pulse rate was 100/minute, RR 24/mt. normotensive. Abdomen was soft,distended (90cms) with tympanic node on percussion. On palpation uterine height corresponded to 24 weeks of gestation, relaxed nontender with foetal parts palpable. There was marked tenderness in the right flank. No guarding or rigidity. Foetal Movements were present. Bowel sounds present. On P/V examination cervix was closed. No discharge/bleeding. On P/R Rectum was empty.Her Hb was 10gm%. TLC 8600/CmmDLC 76,22,1,1. Blood Urea 36mg%, S.Creatinine1.3mg%, SGOT/SGPT 27 &16IU/L, S.bilirubin 0.6mg% S.Electrolytes WNR and Serum Amylase 40 IU/L.Urine Complete NAD.Ultrasonography showed 24wks intact pregnancy with adequate liquor. Small amount of fluid in between few dilated gut loops was visualised. There was no retroplacental clot & no adnexal mass. Maternal liver, Gall Bladder, CBD, Pancreas, Spleen and both Kidneys were normally visualised. She was put on conservative management with nasogastric intubation. Surgeons were also consulted. After eight hours her condition deteriorated with increase in the abdominalgirth to100cms & marked tenderness. Pulse rate increased to120/mt& respiration >30/mt. With repeat surgical consultation and arrangement of blood,she was taken up for laparotomy. InjHydroxyprogestroneCaproate 500mg given IM.

Peroperative-gravid uterus was normal. There was a thick Band of Meckel's Diverticulum approximately10cms in length and >2cms in width extending from behind the abdominal wall upto the antimesentricborder of ileum.It was entrapping a loop of bowel through a defect in the diverticular mesentery & causing subacute intestinal obstruction. Band was approximately 2 feet proximal to ileocaecal junction suggestive of Meckel's diverticulum with fibrous cord attached to abdominal wall. Fibrous band resected from abdominal wall. Small gut freed from the band. Gut was not gangrenous. Meckel's diverticulumwas resected. Gut repaired and continuity of gut restored. There were a few adhesions between the gut and the diverticulum, which were dissected.There was serosal erosion also of an adjacent segment of ileum. Other viscera like appendix, uterus, ovaries, and gallbladder were found to be normal. Post operative period was satisfactory. HPE confirmed the diagnosis. She was discharged on 10th post operative day, with an alive intrauterine intact pregnancy. Regular follow up was advised.



DISCUSSION

The Meckel's diverticulum is an ileal diverticulum located on the antimesenteric border of the ileum, 10-90 cm from caecum. It results from failure of the omphalomesenteric duct to obliterate completely. During foetal development,the midgut communicates widely with the yolk sac through the vitelline or omphalomesentric duct. As the abdominal wall components approximate one another, the omphalomesentric duct narrows and comes to lie within the umbilical cord. Over time, communication between the yolk sac and intestine becomes obliterated and intestine resides freely in peritoneal cavity. Persistence of part or all of omphalomesentric duct results in variety of abnormalities related to intestinal and abdominal wall. A. Omphalomesenteric Duct Cyst, B.Persistant Duct with Enterocutaneous Fistula, C. Omphalomesenteric Duct Cyst & Sinus, D.Fibrous band between small intestine & posterior surface of Umblicus, E. Meckel's Diverticulum. Meckel's diverticulum contains all layers of the intestinal wall and has its own mesentery and blood supply (branch of the superior mesenteric artery). The majority of complicated cases of MD contain ectopic mucosa (75% gastric, 15% pancreatic).This leads to ulceration and bleeding of ileal mucosa adjacent to the acidic ectopic gastric secretions. Alkaline secretions of ectopic pancreatic tissue can also cause ulcerations[4]. Heterotopic tissue is found in 60% of symptomatic cases.

The life time risk of complications from a Meckel's diverticulum is 4.2% with the risk decreasing with age. Meckel's diverticulitis is the third most common complication of Meckle's diverticulum in adult[2] & is often difficult to diagnose. It usually presents with abdominal pain which may mimic such disorders as acute appendicitis, cholecystitis, renal colic and peptic ulcerdisease. Mortality is increased because of perforation, bowel infarction, and exsanguination often as a result of delay in diagnosis and treatment[5].

Apart from these, in pregnancy other obstetrical &nonobstetrical conditions like preterm labor, chorioamnitis, twisted ovarian cyst, red degeneration of fibroid, acute hydramnios, abruptio placentae, rupture uterus and ruptured ectopic pregnancymay also mimic the presentation. Failure to make a timely diagnosis may jeopardize the health of mother as well as the fetus.

Misdiagnosis occurs because of the poor sensitivity of diagnostic tests, nonspecificity of complaints, and lack of recognition that this anomaly can present in pregnancy. Diagnosis may be difficult. Plain abdominal radiography, CT and USG are rarely helpful. Computed tomography (CT) has 90-94% sensitivity and 96-100% specificity for the diagnosis of small bowel obstruction and a 40-73% positive predictive value for predicting the cause of the obstruction[6].Single most accurate test is sodium 99 m Tcpertechnetate scan, but unaffordable by most. The dye is preferentially taken up by the mucus secreting cells of gastric mucosa and ectopic gastric tissue in diverticulum. In adult patients when nuclear studies are normal, barium studies can be performed. In patients with acute haemorrhage, angiography is sometimes helpful. Colonoscopy, Wireless Capsule Endoscopy and Umbilical Ultrasound are other diagnostic modalities.

Symptomatic Meckel's diverticulitis & intestinal obstruction during pregnancy is rarely reported. The enlarged uterus stretches the abdominal wall and compresses the viscera,it results in diminished response to peritoneal irritation and altered or referred pain perception, making the localization of etiology of the pain even more difficult. The diagnosis remains clinical. Physicians need to be cognizant of the multivariate ways of presentation of this disease. Surgical treatment remains same in both pregnant and non pregnant women and involves segmental resection and end to end anastomosis. And Treatment should be prompt[3].

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