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Strangulated and incarcerated para umbilical hernia due to impacted *Ascaris lumbricoides* incidentally detected in a 17 weeks obese pregnant female

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Abstract
This case report discusses a rare presentation of a strangulated and incarcerated paraumbilical hernia caused by impacted *Ascaris lumbricoides* in a 17-week pregnant, obese female. The patient presented with acute abdominal pain and a non-reducible umbilical mass. Ultrasound the diagnosis, revealing a loop of bowel within the hernia sac. Prompt surgical intervention was performed to release the incarcerated bowel and remove the parasitic obstruction, ensuring both maternal and fetal safety. This case underscores the importance of considering parasitic causes in atypical presentations of hernias, particularly in pregnant patients, and highlights the challenges of managing complex surgical emergencies during pregnancy.

Keywords: Umbilical hernia, strangulated hernia, pregnant female, *Ascaris lumbricoides*

Introduction
Background
Para-Umbilical hernias are a common occurrence, particularly among obese individuals and pregnant women, due to increased intra-abdominal pressure. These hernias are usually benign and reducible; however, complications such as incarceration and strangulation can pose significant risks, necessitating prompt surgical intervention. The presence of parasitic infections such as *Ascaris lumbricoides*, a prevalent helminthic infection in tropical and subtropical regions, can further complicate these presentations. *Ascaris lumbricoides* infestation can lead to bowel obstruction, adding a layer of complexity to the clinical scenario, especially in pregnant patients where both maternal and fetal well-being are of paramount concern. This case report discusses a rare and complex situation of a strangulated and incarcerated umbilical hernia caused by impacted *Ascaris lumbricoides* in a 17-week pregnant, obese female, highlighting the necessity for a high index of suspicion for parasitic etiologies in atypical hernia presentations and the surgical challenges involved in managing such emergencies during pregnancy.

Case presentation
A female in 30s visited to emergency department with chief complaints of pain in abdomen for one day with 5months of amenorrhea which she believed that she had menopause. Patient was apparently alright one day back when she suddenly had acute onset pain in abdomen which was gradually progressive not getting settled on rest or any medications.
No any complaints of abdominal distension with vomiting. No any complaints of constipation or obstipation.
She had no any other complaints apart from She was recently diagnosed with type two diabetes.
She was diagnosed case of paraumbilical hernia for five years and managed conservatively for the same.

Obstetrics history
History Of full term normal vaginal delivery uneventful around 10years back.
Family history not significant Personal history
Patient denies any addiction

Social history
She belongs to modified Kuppuswamy classification upper-lower class

Clinical examination
Patient was conscious oriented to time place and person. Patient had Body mass index of 45.
She was a febrile with body temperature 37.5 on admission. Pulse 110 per minute and regular. Blood pressure 130/80 mmHg.
She was maintaining 96% saturation on room air.
Per abdominal examination 10×10 cm Para umbilical irreducible hernia with tenderness on palpation and absent cough impulse.

Investigations
All routine investigations were done and hemogram suggestive of leucocytosis of 17,000 per mm³.
Urine pregnancy test by kit was positive.
Ultrasonography abdomen plus pelvis suggestive of- 10×9.3 cm defect noted in the anterior abdominal wall in paraumbilical location through which bowel loop and omental fat was herniating. Herniating bowel loops appeared prominent and showed sluggish peristalsis with normal internal vascularity
Ultrasonography obstetric scan suggestive of - Single live intrauterine gestation of 17 weeks with adequate liquor with effective fetal weight of 220 g with fetal cardiac activity.

Differential diagnosis
Obstructed paraumbilical hernia - Based on history of pain in abdomen since a day with the clinical examination suggestive of the tender, irreducible paraumbilical swelling with absence cough impulse clearly heads us towards the diagnosis of obstructed paraumbilical hernia.

Treatment if relevant
Preoperative preparation
Valid informed consent was taken.
She was administered injection tetanus toxoid 0.5 ml intramuscular, intravenous broad-spectrum antibiotics were given; intravenous progesterone was administered.

Surgical intervention
Emergency exploratory laparotomy with resection and anastomosis of gangrenous jejunal segment with milking of worm primary closure of para medical hernia defect was done.
Intraoperative findings strangulated and incarcerated paraumbilical hernia with omentum and Jejunal loop as content through a defect of around 10 cm through the anterior abdominal wall around 15cm of jejunal segment is gangrenous. The gangrenous segment was Containing at least three live *Ascaris lumbricoides* worm which probably entered the jejunal loop and could not exit the loop leading to irreducibility of the jejunal and leading to strangulation of segment.
No any peritoneal contamination was present.
Uterus was gravid, Bilateral Fallopian tube and ovaries are healthy.

Outcome and follow-up
1. Immediately after the operative procedure the patient was extubated and shifted to ICU recovery and monitored, anti-embolism stockings were given. Immediate postoperative.
2. Obstetric scan done suggestive of viable fetus.

- Postoperativeday1–Patient was vitally stable.
- Nasogastric tube was kept in situ and made continuous and output monitoring done.
- Foleys catheter was removed.
- Patient was mobilized on the sameday.
- Chest physiotherapy was started and incentive spirometry exercises were started and followed upon regular intervals.
- Injectable broad spectrum antibiotics and injection progesterone was Started.
- Abdominal drain output was around 100cc serosanguinous natured.

3. Post-operativeDay2-Patient was vitally stable.

- Nasogastric tube was in situ.
- Patient was mobilized and breathing exercises continued. Ultrasonography done and was suggestive of single live intrauterine fetus. Injectable broad spectrum antibiotics continued along with injection Progesterone.
- Patient had sluggish bowel sounds in all quadrants but didn’t pass flatus. Abdominal drain output was around 60cc serosanguinous natured.

4. Post-operativeDay3-Patient was vitallystable.

- Patient passed flatus.
- Nasogastric tube was removed and stated on sips followed by liquid diet and patient tolerated the liquid diet.
- Patient mobilization, breathing exercises continued.
- The midline exploratory laparotomy wound was checked and was healthy with no any midline soakage and discharge.
- Abdominal drain was removed in view of decreased output

5. Post-operativeDay4-Patient was vitallystable.

- Patient was started on oral broad spectrum antibiotics and oralprogesterone.
- Patient was started on soft diet followed by solid diet and tolerated the diet well.

6. Post-operative Day 6 Patient was vitally stable.

- Patient was discharged and asked for regular follow up.
- Follow after one week- patient was vitally stable.
- No any fresh complaints on follow up.
- Midline exploratory laparotomy wound was healthy and no evidence of any discharge.
- Follow up after two week-Patient was vitally stable
- Removal of the midline laparotomy sutures done. Follow up after four week-patient was vitally stable.
- No any complaints on follow up.

Learning points/take home messages 3-5 bullet points
If a woman has achieved amenorrhea, before considering it as menopause should consult their gynaecologist to rule out any other causes.
Any hernia specially with an arrow defect with contents such as bowel should be surgically treated as soon as possible.
In case of suspected worm infestation with irreducible hernia a high probability of a developing incarcerated hernia should be considered and should be treated as soon as possible.
Strangulated hernia must be the clinical diagnosis and should be operated as soon as possible for the better outcome. Necessary supportive investigations should be done but we should not rely on the investigations for the decision of further operative management.
Routine deworming for pregnant females must be followed to avoid helminthic infections and any further complications.

Figure/video captions

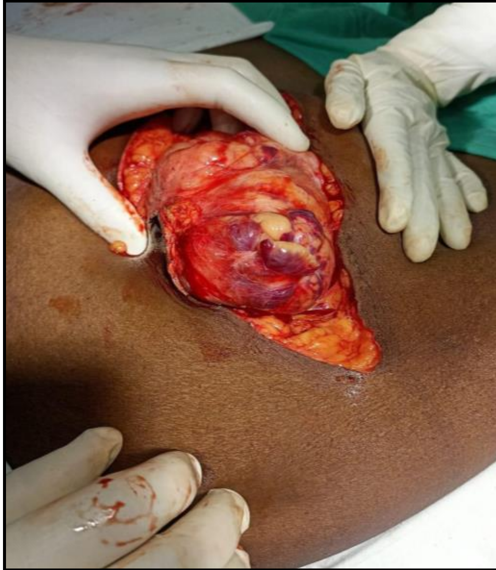

Fig 1: Paraumbilical hernia with sac

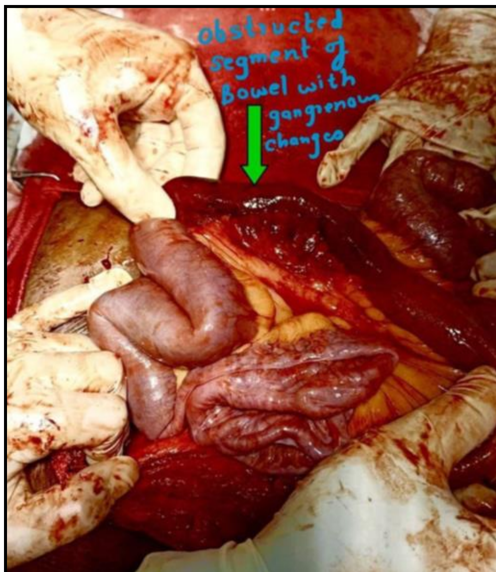

Fig 2: Obstructed bowel with gangrenous changes

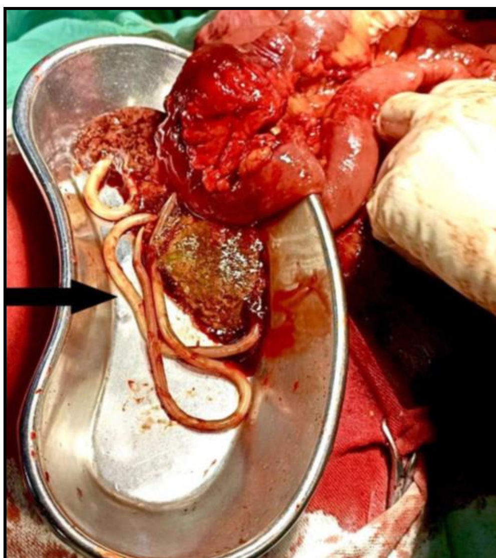

Fig 3: Extraction of ascaris from bowel

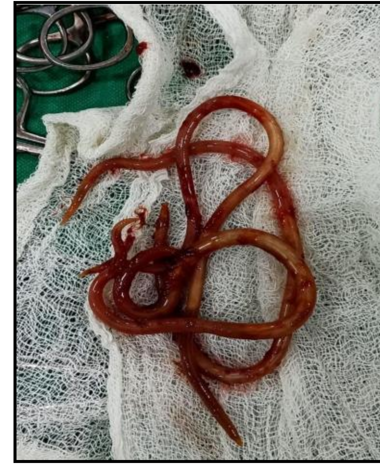

Fig 4: *Ascaris lumbricoides*

Patients perspective

Tips

I recently faced a daunting health scare that I want to share in hopes it might help others in similar situations. As a 17-week pregnant woman dealing with obesity, I found myself in severe pain one day. After rushing to the hospital, I was diagnosed with a strangulated and incarcerated umbilical hernia. To make matters worse, it was caused by impacted *Ascaris lumbricoides*, a type of parasitic infection. The situation was extremely complex and frightening, especially considering the safety of my unborn baby. The medical team acted quickly, recognizing the seriousness of my condition. Thanks to their expertise and swift intervention, I underwent surgery to address the hernia and remove the obstruction caused by the parasites. I am deeply grateful to the entire medical team for their exceptional care and dedication.

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