

Emergency Presentation of Abdominal Pain with Unusual Etiology

Abdul Naeem¹, Maria Aziz², Alia Mir³, Hamid Sial⁴, Muhammad Mudassir Shafiq⁵, Iram Arshad⁶

¹ HOD, Critical Care, NESCOM, Islamabad.

⁴ Deputy Director, NESCOM, Islamabad.

^{2,6} Medical Officer, Holy Family Hospital, Rawalpindi.

⁵ Pulmonologist, NESCOM, Islamabad.

³ HOD, Radiology, NESCOM, Islamabad.

Author's Contribution

¹ Conception of study

^{2,3} Experimentation/Study conduction

^{1,4} Analysis/Interpretation/Discussion

¹ Manuscript Writing

⁶ Critical Review

^{4,5} Facilitation and Material analysis

Corresponding Author

Dr. Abdul Naeem,

Head of Department,

Critical Care,

NESCOM,

Islamabad

Email: dranaeem01@gmail.com

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Abstract

Abdominal pain has vast differentials and routine etiologies are diagnosed easily. The difficulty arises with an uncommon presentation. This is a case of 28 years old lady presenting to the emergency department of Holy Family Hospital, Rawalpindi with worsening abdominal pain, vomiting, and loose stools over 2 weeks. Abdominal examination and baseline laboratory workup (CBC, electrolytes, septic, renal, and liver profile) were inconclusive. Ultrasound of abdomen revealed matted gut loops with enlarged lymph nodes. CECT abdomen confirmed a non-differentiating tissue collection in the right iliac fossa. Later diagnosis of complicated gossybioma (retained gauze surrounded by fibrotic tissue with entero-enteric fistula and fecolith in appendix) was confirmed by laparoscopy that was surgically removed. Conclusion: Gossybioma is an infrequent but avoidable complication that needs to be considered by the surgeon meticulously especially by swab counting, avoiding staff change over during procedure, and considering in a follow-up visit.

Keywords: Gossybioma, Abdominal pain, Laparotomy.

Introduction

Foreign bodies in the human body can be intentional, incidental, or iatrogenic and are reported when start producing symptoms.¹ These foreign bodies can be of a bizarre or pointed shape and range from minute household items to life-threatening bullets.² Usually people forget the incidence that caused foreign body retention that delayed the diagnosis. Similarly, iatrogenic complications do occur that can have short and long-term outcomes.³ Gossybioma is one of such known complications that causes significant distress to the patient and medical team.

Case Presentation

A 28 years old lady presented to the emergency department of the Holy Family Hospital, Rawalpindi on November 13, 2020, with abdominal pain, vomiting, and loose stools.

The patient was in her usual state of health two weeks back when she started feeling lower abdominal pain. The pain started in the suprapubic area that diffused all over the abdomen. It was colicky in nature and increased gradually over the next 48 hours to reach a maximum pain severity score of 7/10 relieved partially with oral paracetamol and NSAIDs. Vomiting was non-projectile, yellowish mixed with semi-digested food residue. Vomiting frequency increased to 3-4 episodes per day as pain score worsened.

Loose stools started after a week of abdominal pain, watery consistency with the frequency of 4-5 episodes per 24 hours. There was no blood or mucus reported by the patient in the stool but associated with mild colic with each burst. No other symptom like fever, anorexia, or weight loss was reported.

Her history was unremarkable for any chronic medical illness. She has been a non-smoker, non-alcoholic, or drug addict. She married 03 years ago and living with her husband. There was no alive issue although she has been pregnant twice and emergency caesarean sections were done. The first baby was born prematurely at 34 weeks of gestation and died within 24 hours due to fetal hypoxia complicated with post-partum hemorrhage. The second baby also died on the second day of life due to acute severe respiratory distress and required ventilatory support. The rest of the systemic inquiry was unremarkable except for dysuria and increased frequency.

On examination, she was well oriented but in distress, pale looking with tachycardia of 104 beats per minute.

Her abdomen was mildly distended having scar marks of previous LSCS. There was diffuse tenderness, marked in the lower abdomen, and audible bowel sounds without organomegaly. The digital rectal and vaginal examination was unremarked. The rest of the systemic examination revealed no abnormality.

Table 1: Emergency Department Workup

<i>Emergency Department Workup</i>				
Blood Counts	WBC ($10^9/L$)	12.9	ESR (mm/1 st hr)	25
	Neutrophils (%)	70	Serum Amylase (u/l)	50
	HB (mg/dl)	11.5	Serum LDH (u/l)	335
	HCT (%)	38	Serum Lactate (mmol/l)	1.8
	PLT ($10^9/L$)	441	Urine Pregnancy Test	Negative
Renal Profile	Urea (mg/dl)	10	pH	7.41
	Creatinine (mg/dl)	0.5	PaCO ₂ (mmHg)	38.2
	Na ⁺ (mmol/L)	135	PaO ₂ (mmHg)	90
	K ⁺ (mmol/L)	4.5	HCO ₃ ⁻ (mEq/L)	23
Liver Profile	Bilirubin (mg/dl)	0.5	SaO ₂	97%
	AST (IU/L)	35	PT	13/14
	ALT (IU/L)	30	APTT	30/30
	ALP (IU/L)	121	INR	1.06
Abdominal X-ray	No dilated gut loops or air-fluid level			

Differentials were subacute intestinal obstruction, GI tuberculosis, pancreatitis, and GI malignancy.

Management

She was started on intravenous fluids to maintain MAP > 65mmHg. She received analgesic (Tramadol 50mg IV), antiemetic (Dimenhydrinate 50mg IV) and antibiotic (Ceftriaxone 1 gram IV) as per hospital protocol. Diagnosis of acute/subacute abdomen was suspected and she was put on conservative treatment with nothing per oral and nasogastric tube in place. She was observed for 8 hours but abdominal pain & vomiting were not settled with minimal distension and audible bowel sounds. Considering her persistent pain with a non-conclusive initial workup, an ultrasound

abdomen was done that showed thick wall matted gut loops in the right iliac fossa with adjacent minimal fluid and few enlarged mesenteric lymph nodes. Therefore computed tomography was planned to dig out the underlying inflammatory/infective gut pathology.

Contrast-enhanced abdominal CT showed a collection of fat-like tissue areas within the cecum, extending into the ileocecal junction with adjacent mild mesenteric stranding measuring 56x 45x36mm (CCXTRXAP). (Images A,B &C)

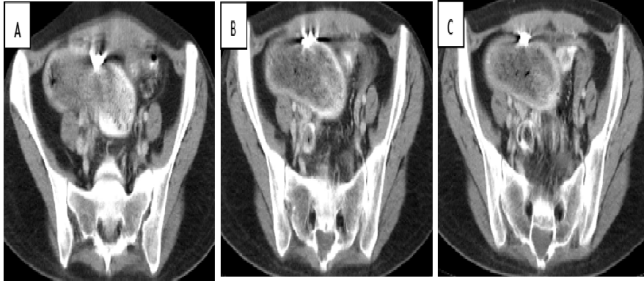


Figure 1:

Post-contrast CT images showing minimal enhancement. (Images D, E) Differentials include ceecal lipoma/ adherent inflammatory omentum.

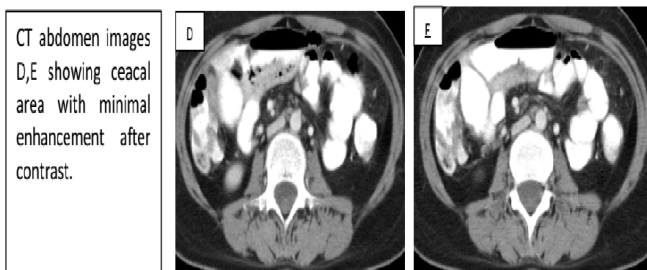


Figure 2:

CT abdomen images D,E showing ceecal area with minimal enhancement after contrast.

With her persistent symptoms and radiology findings, it was diagnosed a mass at the ileocecal junction that could be a primary/secondary tumor. To obtain a biopsy specimen, laparoscopy was carried out on day 3 of admission and found retained surgical gauze (gossybioma) with exudation, firmly adherent to the inter-mesenteric border of ileum and sigmoid colon. The involved segment was 1.5 feet proximal to ileocecal junction. There was an entero-enteric fistula between the ileum and sigmoid colon while fecolith was in an appendix. Having these findings, diagnostic laparoscopy was converted to exploratory laparotomy. The involved segment was resected with primary anastomosis of the ileum and the sigmoid colon was done separately along with appendectomy. Her postoperative period was uneventful and she was

discharged on the third postoperative day without abdominal pain and vomiting.

Discussion

Surgery-related foreign body retention is comparatively less common now-a-days⁴ with a reported rate of 0.01% to 0.001% and 80% of such cases are with gossypibomas.⁵ These iatrogenic complications are the main threat to surgeons resulting in medico-legal consequences.⁶ Technically gossybioma is difficult to diagnose purely on clinical grounds because of the low incidence rate and lack of imaging facilities⁶ but causes significant morbidity with additional surgery burden to the patient. Serious consequences of gossybioma can result in persistent infection, organ dysfunction, and collapse.⁷

Gossybioma initiates an inflammatory response that leads to various consequences. This inflammatory response can be fibrous or exudative in nature⁸ and varies individually in severity.⁹ Type of response depends upon the interaction between foreign objects and body immune reaction. The nature of foreign objects plays an important role like infected material present in the early phase with exudative response leading to sepsis and abscess formation while inert substances cause less intense reactions, and take more time to be symptomatic.¹⁰ Size of foreign object matters as smaller objects move inside easily or are stuck at the narrowest part of the gastrointestinal lumen like the ileocecal valve, resulting in obstructive presentation.^{11,12} Similarly site is too important because a surgical sponge close to the diaphragm can cause rupture and migrate to the thoracic cavity causing respiratory problems.¹³

Clinical diagnosis of an uncommon complication like gossybioma is difficult, especially in an emergency setup, and challenging to counsel the patient and family. It is a brain energizer for a radiologist to report unusual findings¹⁴ because imaging modalities can diagnose up to 75% gossybioma cases as described by Rajiv et al and the remaining are found intraoperatively.^{15,16} Recalling the history points, correlating with examination and laboratory findings then considering rare or unusual diagnoses lead to success. The same approach was carried out in our case to solve the dilemma.

Review comments of, the radiologist: Scanning the images, thick wall collection in the right pelvis is obvious with internal air-lucencies and marked strandy changes in perilesional fat. A metallic artifact can be appreciated along the anterior wall of the

collection. This could be a metallic marker that is placed in surgical swabs during sterilization. These artifacts are not uncommon and should be matched with the clinical condition of the patient. Because these metal streak artifacts can occur due to motion, edge effects, noise, and beam hardening. Techniques like the metal deletion technique (MDT) are used to minimize these artifacts. Sometimes improving the image quality with such techniques can change the diagnosis.¹⁷

Management of gossybioma is removal either via open or laparoscopic surgery.¹⁸ Early removal is also important to avoid complications like migration, infection, and fistula formation.¹⁹ However type of surgery depends upon the size, location, complexities, available skills, and resources.²⁰ Endoscopic removal should be attempted after confirmation of gossybioma inside the gut lumen.²¹

Prevention is the key. Steps have been taken like swab and instrument count,^{22,24} avoid a change of staffing during the procedure, use of minimally invasive procedures⁷ and observation in follow-up period but still these cases occur sporadically.²³

Conclusion

Gossybioma is considered as "Res Ipsa Loquitur" which means "thing speaks for itself indicating negligence on the part of the surgical team. Maintaining operation theatre record books and staff education are the important steps to avoid such complications.²² Retained foreign body should be considered in the differentials of any postoperative case with abdominal pain, vomiting, or mass.²⁵

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