Foreign Body Ingestion in Patients with Borderline Personality Disorder

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1. **Patient #1**: introduction to evaluation of acute abdomen in a psychiatric patient;
   1. Radiologic imaging and differential diagnosis of acute abdomen
   2. Borderline personality disorder (brief introduction)
   3. Radiologic and surgical management of foreign object ingestion

2. **Patient #2**: further exploration of BPD and foreign object ingestion

3. **Supplementary case #1**: Trichobezoars

4. Summary

5. References
Patient #1: Initial Presentation

- SD is a 32 y.o. obese Caucasian female with PMH of asthma, poorly controlled DM, peripheral neuropathy, hypertension and viral meningitis. During the interview, one notes that the patient is a poor historian – she often withholds information, and at times refuses to speak to the interviewer.

- CC: “My stomach does not feel so well”

- Physical exam reveals a diffusely tender abdomen (5/10 pain), with poorly defined pain (no localization to a particular quadrant).
  - No ascites noted on physical exam.
  - Decreased bowel sounds.
  - Absent splenomegaly/hepatomegaly.

- No occult blood noted on rectal exam. Patient reports no hematemesis, melena or hematochezia.

- Patient’s presentation is relatively non-specific and can be due to a number of different etiologies.
Patient #1: Differential Diagnosis

• Broad differential diagnosis for the initial presentation:
  – Metabolic:
    • Diabetic ketoacidosis, diabetic neuropathy-associated ileus
    • Gallstones (atypical presentation)
  – Structural:
    • Early SBO (adhesions, hernia, volvulus), perforation,
  – Inflammatory:
    • Peptic ulcer disease
    • Gastroenteritis, pancreatitis, colitis
  – Vascular:
    • Myocardial infarction (atypical presentation)
    • Small bowel ischemia
  – Gynecologic:
    • Ectopic pregnancy, tubo-ovarian abscess, ovarian CA
  – Malignancy:
    • Stomach CA, pancreatic CA, small/large bowel CA, lymphoma
Radiologic Evaluation of Acute Abdomen

- Radiologic imaging, as well as basic blood/urine tests, are the most essential component of further narrowing the differential diagnosis in our patient.

BIDMC ED algorithm for evaluation of acute abdomen:
1. Rapid pregnancy test (done routinely in pre-menopausal females regardless of the type/location of abdominal pain).
   1. If positive - pelvic ultrasound to evaluate for GYN problems.
   2. If negative:
      1. Complaints of RUQ pain (or suspicion of cholelithiasis) – RUQ ultrasound
      2. Otherwise:
         1. Abdominal plain film (both supine + upright).
         2. Abdominal CT scan
         3. Further specific imaging (MRI, arteriogram, nuclear imaging, etc)
Patient #1: Abdominal Plain Film
(Unlabeled for Pathology)

Patient 1: AP upright plain film of the abdomen.
Patient #1: Abdominal Plain Film (Pathology Labeled)

Legend:
- Cholecystectomy
- Suture/ clips
- Pen
- Batteries
- IUD

Patient 1: AP upright plain film of the abdomen. Pathologic findings labeled.
Radiologic Evaluation of Foreign Body Ingestion

- In addition to detecting/quantifying the foreign objects in the patient’s abdomen, radiologists must look for the presence/absence of associated pathology.

- Often, upright chest X-rays are needed to assess for perforation of esophagus/stomach/intestine and resultant pneumothorax or pneumoperitoneum. Chest films are also useful for initial evaluation of foreign object-caused bleeding into the mediastinum and to rule out dreaded pericardial effusion/cardiac tamponade.
Patient #1: AP and Lateral Chest Films – Assessing for Perforation

Patient 1: AP upright chest X-ray anterior view.

Patient 1: Upright chest X-ray lateral view.
Patient #1: Further History

• When confronted with radiologic findings, patient initially refuses to talk to the examiner.

• Following day admits to longstanding diagnosis of **borderline personality disorder**.

• CC: "*I tried to hurt myself. . . life is not so wonderful.*"

• Frequent episodes of depression, often “*feels rejected*”

• Multiple past episodes of self-injurious behavior, including:
  – Superficial cutting of wrists and across the abdomen.
  – Ingestion of foreign objects (30+) including pens, metal clips and batteries
  – Insertion of foreign objects (e.g. pens) in her vagina
  – Numerous suicide attempts – jumping from a window, jumping in front of a car, acetaminophen overdose, hanging.
Patient #1: Treatment

• **Radiologic imaging** is an **essential** component of assessment and treatment for these patients.

• Chief treatment options consist of:
  - Non-invasive/Minimally Invasive (more common)
    - **Serial KUBs** over the remainder of stay for evaluation of progress of foreign objects through the small/large intestine and development of any secondary pathology (e.g. **perforation**, **obstruction**)
    - **Esophagastroduodenoscopy (EGD)** for direct visualization of objects in the upper GI tract. Possible removal of smaller objects (via a snare) in the stomach/esophagus at this point.
  - Invasive (less common):
    - **Exploratory laparotomy** with foreign object removal in case of severe obstruction or perforation.
Patient #1 (Different Episode): Serial KUB 1.

Patient 1: Supine plain film of the abdomen. Ingested objects are within the stomach lumen.

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Patient #1 (Different Episode): Serial KUB 2.

Patient 1: Supine plain film of the abdomen. Ingested objects are within the colon lumen.
Patient #1 (Different Episode): Serial KUB 3.

Patient 1: Supine plain film of the abdomen. Note foreign objects in sigmoid colon.
Patient #1 (Different Episode): Serial KUB 4.

Patient 1: Supine plain film of the abdomen. Patient passed foreign objects without major complications.
Borderline Personality Disorder

- Personality disorder – rigid and ongoing patterns of thought and action
- Cluster B (dramatic-erratic) disorders: WILD
  - Borderline, Antisocial, Histrionic, Narcissistic
  - Disturbances in impulse control and emotional regulation

- Borderline Personality Disorder:
  - DSM-IV criteria:
    - Frantic efforts to avoid real or imagined abandonment
    - Pattern of unstable/intense interpersonal relationships
    - Identity disturbance: marked and persistently unstable image of self
    - Affect instability: rapid alterations in affect, difficulty controlling anger, etc.
    - Impulsivity (e.g. promiscuous sex, eating disorders, substance abuse) and recurrent suicidal ideations/threats and/or self-mutilating behavior (cutting, burning, etc)
  - Common pattern is history of childhood abuse/neglect
  - Tend to regress during hospital stay
  - Employ splitting – causes arguments within the healthcare team.
  - Treatment: no medical treatment (? SSRIs), mixed success with DBT
Patient #2: Initial Presentation

- DD is a 41 y.o. homeless male, with history of HCV, borderline personality disorder (BPD), substance abuse, multiple suicide attempts and PTSD.
- Significant history of childhood sexual abuse by his parents.
- Patient presents with cycles (3-6 months) of self-injurious behavior, including cutting, burning and ingesting sharp objects (glass shards or razor blades) with primary gain of obtaining/maintaining medical and personal attention.

Examples of patient’s past presentations to the ED:
- CC #1: "My whole life has been up and down... I can't get my life back... I'll harm myself until I kill myself"
- CC #2: "I'm going to kill myself because no one's helping me."
- CC #3: "I swallowed razor blades."
Patient #2: Initial Presentation (cont’d)

• Most recent admission:
  – CC: “…I swallowed glass”
  – Patient was released from a different hospital, and on the same day ingested 5 pieces of glass. Subsequently, he cut his neck with a beer can, then hung up rope at the park – with intent to “hang myself”. Was found by police and admitted at BIDMC.
  – At BIDMC ED patient reaffirmed pervasive suicidal/self-harming behavior and noted diffuse abdominal discomfort

• Patient management:
  • Initial radiologic evaluation for extent of GI trauma/foreign bodies;
  • Subsequent serial KUBs for evaluation of foreign body passage;
    – Monitor for complications including small bowel obstruction, pneumothorax, pneumomediastinum, pericardial bleeding, etc.
  • Eventual (?) discharge to a long-term psychiatric facility
Patient #2: KUB on most recent admission

Legend:
Glass shards
Surgical clip

Patient 2: Supine plain film of the abdomen. Ingested objects are within the stomach lumen
Patient #2: AP and Lateral Upright Chest Plain Films (Most Recent Admission)

Patient 2: Upright Chest Plain Film AP view; Note the absence of significant pathologic findings other than the surgical clip in RUQ.

Patient 2: Upright Chest Plain Film Lateral view; note absence of pathologic findings other than the surgical clip in RUQ.

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20
Patient #2: KUB (Past Admission 1)

Patient 2: Supine plain film of the abdomen. Some of ingested objects can be identified on the film.

Legend:
- Razor blade
- Fragments of Sunglasses
- Metal wire
Patient #2: Supine plain film of the abdomen. Pathologic findings are not labeled

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Patient #2: KUB (Past Admission 2)

Legend:
- Coin
- Fragments of a Lighter
- Fragments of a Coca Cola can
- Gastrografin contrast in the colon

Patient 2: Supine plain film of the abdomen. Some of ingested objects can be identified on the film. Gastrographin contrast is visible in the lumen of the large intestine.
Patient #2: AP Upright Chest X-ray Illustrating the Complications During Most Recent Hospital Stay

During most recent hospital stay, patient ingested a tube of toothpaste (tube and all), as well as a metal paper clip, despite a sitter. Some of the objects are evident on this chest plain film.
Companion Case #1: Trichobezoars

- Chronic hair ingestion (trichophagia) leading to formation of a hair ball (trichobezoar) within the lumen of the stomach.

- Associated with trichotillomania, mental retardation, OCD behavior and cluster B personality disorders (borderline).

- Rarely may progress to Rapunzel syndrome – SBO due to trichobezoar extension into small bowel lumen

www.ispub.com/.../ijs/vol14n2/rapunzel.xml
www.learningradiology.com/.../bezoarcorrect.htm
Summary:

• Foreign object ingestion is an uncommon, but devastating presentation of patients with severe borderline personality disorder.

• These patients are typically “complicated” patients and tend to be refractory to behavioral or pharmacologic treatment options. Most of them will repeat the self-harming behavior soon after they are discharged from the hospital.

• While commonly patients ingest objects to obtain attention (or medical care), it is not uncommon that serious complications or even death ensue.

• Radiologic imaging is an essential component of medical management of these patients. They typically require numerous (serial) KUBs and chest X-rays to evaluate for any significant pathology until the foreign bodies are cleared.

• Surgery is only recommended in the setting of significant pathology (e.g. obstruction or perforation).
References:

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