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Intussusception Induced by an Indwelling Gastrostomy Tube in an Adult Bed-Bound Woman: A Rare Complication

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Abstract

Adult intussusception is an uncommon diagnosis, usually associated with a structural lead point such as a neoplasm or adhesion. Gastrostomy tube-related intussusception is an exceedingly rare occurrence, with only sporadic cases reported in the literature. We describe the case of a 50-year-old, bed-bound woman with multiple comorbidities who presented to the emergency department with abdominal distension, tachycardia, and laboratory abnormalities, including marked leukocytosis and transaminitis. Computed tomography of the abdomen revealed a long-segment intussusception with the gastrostomy tube balloon lodged in the distal duodenum/early jejunum, as well as distension of the stomach and unexpected fluid and air in the vaginal vault. The patient's evaluation was further complicated by findings of multifocal pneumonia. This case illustrates the diagnostic and management challenges of tube-induced intussusception in an adult, highlights the importance of considering alternative explanations such as ileus, constipation, or gastroparesis that may delay recognition, and emphasizes the need for vigilance in vulnerable, nonverbal patients.

Keywords

Intussusception, Target Sign, Feeding Tube, Small Bowel Obstruction, Enteral Feeding Tube, Computed Tomography, Adult Intussusception

1. Introduction

Intussusception, the telescoping of one segment of bowel into another, is a well-recognized cause of intestinal obstruction in children but a rare diagnosis in adults [1] [2]. While pediatric cases are often idiopathic, adult intussusception almost

always has a structural lead point. These include malignant or benign tumors, polyps, adhesions, or postsurgical changes. In adults, intussusception accounts for only a small fraction of bowel obstructions and fewer than 5% of all reported intussusceptions [3]-[5].

Gastrostomy and jejunostomy tubes, though widely used and generally safe, have occasionally been reported as rare lead points for intussusception [6]. Migration of the balloon or distal tube segment into the small bowel can precipitate telescoping, with consequences ranging from partial obstruction to ischemia and necrosis. Yet despite the ubiquity of feeding tubes in chronically ill, neurologically impaired patients, few clinicians consider tube-induced intussusception when faced with abdominal complaints [6] [7]. Instead, more common explanations such as constipation, ileus, gastroparesis, or other causes of obstruction (including volvulus or colitis) are typically pursued first, which can contribute to diagnostic delay.

This case report presents a bed-bound, disabled woman who developed long-segment intussusception caused by her gastrostomy tube. Beyond its rarity, the case illustrates the diagnostic complexity of evaluating nonverbal patients with overlapping crises, reminding emergency physicians of both the breadth of their differential and the depth of their responsibility to those who cannot speak for themselves.

2. Case Presentation

A 50-year-old woman with a history of subarachnoid hemorrhage from ruptured cerebral aneurysm, ventriculoperitoneal shunt placement, hypertension, chronic kidney disease, asthma, and anemia was brought to the emergency department from a nursing facility for evaluation of abnormal laboratory results and altered clinical status. She was minimally verbal at baseline but could express discomfort through grimacing.

On arrival, she was tachycardic, with heart rates ranging from 120 to 127 beats per minute. Her blood pressure varied between 113/74 and 131/91 mmHg. She was afebrile with temperatures of 36.8˚C to 37.2˚C, respiratory rate was 20, and oxygen saturation was 95% to 96% on room air. Physical examination was limited, but abdominal distension was noted, and the patient grimaced with palpation.

Laboratory studies demonstrated marked leukocytosis, with white blood cell counts of 19,000 to 23,000/μL and neutrophil predominance. Hemoglobin and platelet counts were within normal limits. The basic metabolic panel revealed sodium of 144 mmol/L, potassium 4.8 mmol/L, blood urea nitrogen 29 mg/dL, and creatinine 0.61 mg/dL. Liver enzymes were elevated, including AST 86 U/L, ALT 94 U/L, alkaline phosphatase 137 U/L, and total bilirubin 1.3 mg/dL with direct bilirubin 0.7 mg/dL. Lactate was elevated at 2.2 to 2.6 mmol/L, and high-sensitivity C-reactive protein was markedly elevated at 144 mg/L. Coagulation studies revealed an INR of 1.3. Additional laboratory findings included phosphorus of 4.8 mg/dL, magnesium of 2.5 to 2.7 mg/dL, and low ionized calcium at 0.88 mmol/L.

Given the patient's tachycardia, leukocytosis, and laboratory profile suggestive of systemic inflammation, a broad imaging evaluation was pursued. CT of the abdomen and pelvis with intravenous contrast revealed a long-segment intussusception extending along the indwelling gastrostomy tube, with the balloon lodged in the fourth portion of the duodenum/early jejunum (Figure 1). The stomach was distended, concerning for a partial obstructive component. Fluid and air were unexpectedly noted in the vaginal vault. A concurrent CT angiogram of the chest excluded pulmonary embolism but demonstrated scattered patchy opacities and consolidation in both lower lobes consistent with multifocal pneumonia, likely aspiration related. CT of the head and shunt series showed no acute intracranial pathology or shunt malfunction. A chest radiograph demonstrated no acute abnormality beyond chronic right hemidiaphragm elevation and atelectasis.

In the emergency department, the patient was resuscitated with intravenous fluids and received broad-spectrum antibiotics, including cefepime, vancomycin, and metronidazole, for suspected sepsis. Blood cultures were obtained, and the patient was kept nil per os. Surgical consultation was obtained. Given her baseline debility, multiple comorbidities, and advance directives that included Do Not Resuscitate/Do Not Intubate (DNR/DNI) status, immediate surgical intervention was deferred pending further stabilization and multidisciplinary discussion. Supportive measures were prioritized, and she was monitored closely for signs of obstruction progression or bowel ischemia.

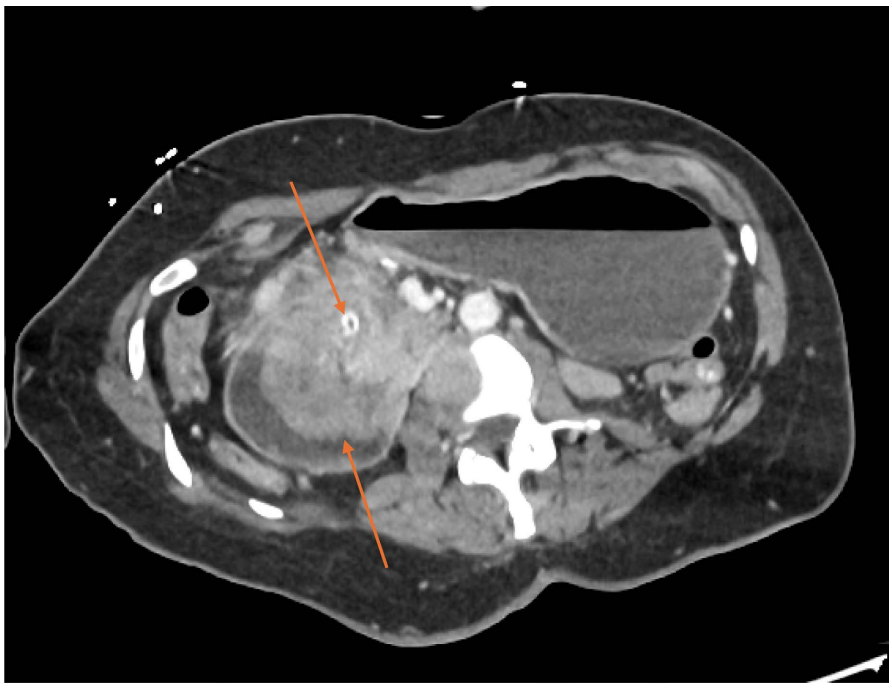

Figure 1. Axial contrast-enhanced CT of the abdomen and pelvis demonstrating an enteric feeding tube (top arrow) within the small bowel. A bowel-within-bowel configuration is visible in the mid-abdomen (bottom arrow), producing the classic "target" sign characteristic of intussusception in the fourth portion of the duodenum/early jejunum.

3. Discussion

Adult intussusception remains a diagnostic challenge because of its rarity, nonspecific symptoms, and frequent overlap with other conditions [1] [6] [7]. While abdominal pain, distension, nausea, and vomiting are classic features, they are often absent or muted in neurologically impaired, nonverbal patients. In such individuals, subtle findings such as grimacing or laboratory abnormalities may be the only clues.

Most adult cases are driven by structural lead points, with malignant tumors accounting for a significant proportion. Benign etiologies, including adhesions, polyps, and postsurgical changes, are less common [1] [2]. Gastrostomy tube–induced intussusception is especially rare, though reported in isolated case series and reports [6] [7]. The proposed mechanism involves balloon migration into the small intestine, where it acts as a lead point around which peristalsis telescopes the bowel. Potential contributing factors to balloon migration include inadequate positioning of the external bolster, gradual tract dilation over time, or traction on the tube during patient movement or care. In immobile or neurologically impaired patients, altered motility and delayed gastric emptying, impaired peristalsis, and generalized dysmotility are common and may increase susceptibility to intussusception [3]-[5].

Our patient's case illustrates several diagnostic and management challenges. First, the presence of vaginal fluid and air on imaging raised concern for vaginal fistula, genitourinary infection, occult infections or instrumentation-related changes, thus broadening the differential diagnosis. Second, concurrent multifocal pneumonia could easily have been accepted as the primary driver of her systemic illness, creating a risk of anchoring bias and missed diagnosis. Finally, her baseline debility and code status limited the immediate pursuit of operative management, requiring a careful balance between aggressive intervention and patient-centered care.

For emergency physicians, the case emphasizes the necessity of resisting premature closure. Anchoring on pneumonia or sepsis alone might have obscured the intussusception, which was only recognized through the decision to pursue broad cross-sectional imaging. In this sense, the case reaffirms a core principle of emergency medicine: rare complications exist, and they often present in the most vulnerable patients who can least advocate for themselves.

4. Conclusions

This case describes a rare instance of adult intussusception induced by a gastrostomy tube. It highlights the importance of vigilance in recognizing uncommon complications in tube-fed patients presenting with abdominal distension or pain. The diagnosis in this patient was established through CT imaging, which not only revealed the intussusception but also uncovered additional unexpected findings that broadened the differential and shaped management. Ultimately, the complexity of her presentation demanded a multidisciplinary approach guided by her

comorbidities, code status, and the priorities of supportive care.

Emergency physicians live in a space where certainty is scarce, and every patient embodies both the probable and the improbable. For this woman, her pneumonia and laboratory abnormalities could easily have sufficed as an explanation. Yet the CT told a deeper story: a tube meant to nourish had become the very thing that endangered her. Cases like this remind us that vigilance, thoughtful use of imaging, and respect for patient complexity are not optional virtues but essential practices. In the end, the lesson is not merely about a rare complication of a gastrostomy tube. It is about the art of listening closely when patients cannot speak, about honoring the silences and subtle signals, and about accepting that in emergency medicine, the rare and the routine often coexist in the same patient, waiting to be seen.

This case describes a rare instance of adult intussusception induced by a gastrostomy tube. It highlights the importance of vigilance in recognizing uncommon complications in tube-fed patients presenting with abdominal distension or pain. The diagnosis in this patient was established through CT imaging, which not only revealed the intussusception but also uncovered additional unexpected findings that broadened the differential and shaped management. Specifically, the coexistence of intussusception, multifocal pneumonia, and unexplained vaginal air and fluid complicated the diagnostic picture and underscored the importance of broad imaging. Ultimately, the complexity of her presentation demanded a multidisciplinary approach guided by her comorbidities, code status, and the priorities of supportive care.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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