Intussusception and Chronic Marijuana Use in a Young Adult

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Patient: Female, 26-year-old

Final Diagnosis: Intussusception

Symptoms: Abdominal pain • nausea

Medication: —

Clinical Procedure: CT scan • surgery

Specialty: Gastroenterology and Hepatology • General and Internal Medicine • Surgery

Objective: Unusual clinical course

Background: Intussusception is a common phenomenon in children, but it is rare in adults. In the pediatric population, the presentation is commonly primary, without a lead point. However, up to 90% of intussusception cases arise due to a secondary cause — a pathological lead point — which is the most common etiology in adults being malignancy. Herein, we present a case report of adult intussusception without a known cause.

Case Report: A 26-year-old woman presented to the hospital with severe abdominal pain. She admitted to not passing stool or gas for 2 days. The patient's social history was significant for chronic marijuana use. A computed tomography (CT) scan of the abdomen revealed a 6-cm in length intussuscepted segment of bowel in the descending colon distal to the splenic flexure with no obvious inciting mass. The patient was sent for emergent open abdominal surgery. Upon surgical exploration, the surgeons discovered that the intussusception had self-resolved. Aside from a small ball of stool, an intraoperative colonoscopy revealed no masses or polyps.

Conclusions: Marijuana use is known to disrupt gastrointestinal (GI) mobility through receptors in the GI tract nerve plexuses. The incidence of chronic marijuana use and adult intussusception is documented in the literature. Conservative management with bowel rest is confirmed to be a suitable treatment option with a favorable outcome. Therefore, we present this case to increase awareness of the potential adverse effects of chronic marijuana use, and to prevent invasive treatment.

Keywords: Colonic Pseudo-Obstruction • Colonoscopy • Intussusception

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**Background**

Adult intussusception is a rare and potentially life-threatening condition that accounts for less than 0.1% of all adult hospital cases [1]. Intussusception is the telescoping of the proximal bowel within the lumen of the adjacent distal segment of the GI tract [1-3]. Children account for most intussusception cases and typically present with a benign course easily resolved with pneumatic or hydrostatic (air contrast enemas) reduction in 80% of cases [3]. Less commonly, this condition can appear in adults, accounting for 5% of cases and 1-5% of all bowel obstructions [4,5].

Almost 90% of adults’ cases are due to a secondary cause (eg, carcinomas, polyps, colonic diverticulum, and benign neoplasm) [3,5]. Neoplasms are the most frequent cause of secondary intussusception in adults, comprising approximately two-thirds of cases requiring surgical intervention – this increased risk of malignancy warrants surgical resection as first-line treatment [3]. Additionally, the mesenteric vascular flow may also become compromised, leading to bowel obstruction, thickening, or ischemia [3].

A less common and more recent potential cause of adult intussusception, described by Zaidi et al, describes chronic marijuana use as a culprit. Due to marijuana’s inhibitory effect on GI motility, it must be considered in adult cases of intussusception presenting without an identifiable organic lead point. Marijuana has an inhibitory impact on GI motility [5]. Studies have shown that marijuana has “anti-peristaltic effects via cannabinoid receptor type 1 (CB1) receptors located in the submucosal and myenteric nerve plexus, as well as epithelial cells, throughout the GI tract.” [5]. Herein, we present a unique case of reversible intussusception in a young adult female.

**Case Report**

A female in her 20s with a past medical history significant for marijuana use presented to the emergency room with abdominal pain. Two days before presentation, she began experiencing severe, debilitating abdominal pain, during which she denied passing gas or stool. She denied the use of novel medications, history of prior surgeries, history of sexually transmitted diseases or risky behavior, and family history of irritable bowel disease or malignancy. The patient admitted to the ingestion of edible marijuana goods such as brownies 2 to 3 times a week. Vitals signs were unremarkable and physical exam was only significant for tenderness to palpation in the hypogastric region. The laboratory workup was unremarkable, including white blood cell count, lactic acid, and a negative HIV result. CT abdomen/pelvis with contrast confirmed a 6-cm in length intussuscepted segment of bowel located in the descending colon distal to the splenic flexure without evidence of an inciting mass or obstruction (Figures 1, 2).

General surgery was consulted and ultimately planned for explorative laparotomy with possible colectomy. Conventional open abdominal surgery was performed due to concern of possible gangrene and ischemia of the colon, as the patient had not passed stool or gas in 2 days. Upon exploration, the intussusception had resolved itself and was absent. A ball of stool was palpated at the site of prior intussusception and massaged down to the rectum, followed by an intraoperative colonoscopy. The colonic mucosa at the intussuscepted site was edematous. No mass or polyps were observed. The patient was discharged from the hospital 5 days following surgery and was...
followed up with gastroenterology within 1 week of discharge. She completed her follow-up colonoscopy within 3 months of discharge and the results were unremarkable.

**Discussion**

Intussusception in adults typically involves the small intestine. Terminology depends on what anatomical structures are affected [6]. Purely intestinal intussusceptions are referred to as enterenteric or colocolic, consisting only of the small intestine and colon, respectively. Other forms include ileocolic, ileocecal, and appendiceal. A study consisting of 745 adult patients with intussusception found that 52% involved the small intestine and 38% involved the colon [6]. Of those that were of colonic origin, less than half were colocolic without cecal or appendiceal involvement. Our patient had a colocolic intussusception distal to the splenic flexure representing a statistical rarity, as most cases involve the small intestine.

In general, intussusception is a rare entity in adults, and it differs significantly from pediatric cases in regards to the cause, clinical presentation, diagnosis, and treatment. In children, intussusception is most commonly due to a primary reason without a lead point, while adults typically present due to secondary causes [1-3]. However, in the rare setting of no identified organic lesion, a transient non-obstruction is considered and warrants broadening the differential diagnosis [7]. Although most often idiopathic, both Crohn’s disease and celiac disease may present with this form [8]. More recently, chronic marijuana use has been linked to transient cases. Both Fernandez-Autuax et al and Zaidi et al presented cases that paint a similar clinical picture as seen in our patient [6,9]. Lead points were not identified in any case, and all patients shared a history of marijuana use. Three out of the 4 subjects presented between the 2 sources received conservative management, which led to spontaneous resolution [6,9].

Etiology determines management, treatment, and ultimately patient outcome. Therefore, appropriate screening and diagnostic modalities are vital for identifying a source. Colonoscopy, endoscopy, and barium studies are standard imaging techniques implemented to provide information regarding the GI tract [10]. Abdominal CT is regarded as the modality of choice for identifying a source. Evidence of a heterogeneous ‘target’ or ‘sausage-shaped’ soft-tissue mass consisting of an outer intussusceptum and central intussuscipiens is practically pathognomonic [10]. Plain abdominal films can provide signs of obstruction but are not specific or sensitive in terms of diagnosis, and ultrasound is a quick and helpful tool that can be used concurrently with presence of a palpable abdominal mass [10].

Conservative management is an acceptable option with reported success in cases without evidence of ischemic bowel or perforation [6-10].

Simple reduction is recommended in idiopathic intussusception when there is no pathological evidence of an underlying lesion. Patients with similar findings following routine endoscopy and colonoscopy findings resolved spontaneously with conservative treatment such as bowel rest, antiemetics, and intravenous (i.v.) fluids [5]. Follow-up bowel series yielded a resolution of the intussusception [6,9]. However, explorative laparotomy and laparoscopy remain the mainstay form of treatment for intussusception in adults, as illustrated by many authors. This method allows for resection of lead point masses and areas of ischemia, as malignancy comprises up to 50% of cases [6]. Preoperative reduction by barium or air, a common form of treatment in children, carries the risk of perforation and seeding of microorganisms or tumor cells [6]. Our patient presented with a 2-day history of obstipation and debilitating pain, raising the concern of potential bowel ischemia. To prevent permanent bowel damage, including perforation of potentially friable tissue, the patient was taken directly into surgery.

This study intends to change the perspective on the consideration and management of intussusception in adults. In the absence of warning signs (eg, bowel obstruction or perforation), we hope conservative management will be considered more frequently to avoid unnecessary surgical intervention and complications. Additionally, physicians and researchers must perform more studies to investigate the link between chronic marijuana use and adult intussusception. As recreational marijuana continues to become legalized across the United States, its use will continue to rise.

This report intends to increase awareness of healthcare professionals about the role of marijuana use in the development of adult intussusception. Being aware of this relationship can prevent potential complications and unnecessary invasive interventions.

**Conclusions**

Adult intussusception is a rare entity in adults. When a diagnosis is confirmed, it is crucial to establish an etiology because it can affect management and treatment. Abdominal CT scan is the imaging modality of choice for diagnosis, and if no organic lesion is identified as the cause, it is vital to broaden the differential diagnosis. Chronic use of marijuana can affect intestinal motility and should be considered a potential cause due to the increased number of adult cases.
References:

1. Yalamarthi S, Smith RC. Adult intussusception: Case reports and review of literature. Postgrad Med J. 2005;81(953):174-77
2. Marinis A, Yiallourou A, Samanides L, et al. Intussusception of the bowel in adults: A review. World J Gastroenterol. 2009;15(4):407-11
3. Lianos G, Xeropotamos N, Balti C, et al. Adult bowel intussusception: Presentation, location, etiology, diagnosis and treatment. G Chir. 2013;34(9-10):280-83
4. Lu T, Chng YM. Adult intussusception. Perm J. 2015;19(1):79-81
5. Zaidi SR, Khan ZH, Mukhtar K, et al. A Case of Intussusception in a patient with marijuana use: Coincidence or possible correlation? Cureus. 2020;12(3):e7493
6. Lu T, Chng YM. Adult intussusception. Perm J. 2015;19(1):79-81
7. Knowles MC, Fishman EK, Kuhlman JE, Bayless TM. Transient intussusception in Crohn disease: CT evaluation. Radiology. 1989;170(3 Pt 1):814
8. Le J, Labha J, Khazaeni B. The malingered intussusception. Clin Pract Cases Emerg Med. 2017;1(4):298-300
9. Fernández-Atutxa A, de Castro L, Arévalo-Senra JA, et al. Cannabis intake and intussusception: An accidental association? Rev Esp Enferm Dig. 2017;109(2):157-59
10. Agha FP. Intussusception in adults. Am J Roentgenol. 1986;146(3):527-31