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## When the vermiform appendix resembles a polyp: Be cautious of an intussuscepted appendix polypectomy

Raffaele Pellegrino, Antonietta Gerarda Gravina

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### Abstract

This article discusses a recently published case report on a rare instance of type IV appendiceal intussusception with a concurrent mucinous adenocarcinoma of the cecum in a young individual. The report highlights challenges in diagnosing appendiceal intussusception, emphasizing the importance of endoscopic expertise in preventing impulsive decisions such as inappropriate polypectomies. The rarity of the concurrent intussuscepted appendix and mucinous cecal cancer is underscored, prompting consideration of malignancy in appendiceal intussusception cases. Additionally, the report addresses the increasing incidence of early-onset colorectal cancer and the need for a reevaluation of diagnostic paradigms in the context of evolving epidemiological trends. The awareness of potential misinterpretations and the imperative for further investigation into this rare condition are emphasized.

**Key Words:** Appendiceal intussusception; Colorectal cancer; Early-onset colorectal cancer; Digestive endoscopy; Abdominal pain; Bloody stools; Diarrhea

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**Core Tip:** This article examines a recently published case report detailing a unique instance of type IV appendiceal intussusception complicated by mucinous adenocarcinoma of the cecum in a 20-year-old individual. The report emphasizes diagnostic challenges, particularly in distinguishing appendiceal intussusception from polyps, and underscores the necessity for endoscopic expertise to guide appropriate interventions. Furthermore, it discusses the rarity of concurrent occurrences of intussuscepted appendix and mucinous cecal cancer, highlighting the importance of considering malignancy in such cases. The article also addresses the increasing incidence of early-onset colorectal cancer, advocating for a reassessment of diagnostic approaches in light of evolving epidemiological trends.

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## TO THE EDITOR

We have perused with keen interest the report "Appendiceal intussusception complicated by adenocarcinoma of the cecum: A case report" [1], recently published in the *World Journal of Clinical Cases*. This noteworthy case elucidates a singular instance of a type IV [2] appendiceal intussusception involving the vermiform appendix ensconced within the cecum, juxtaposed with the presence of a mucinous adenocarcinoma of the cecum in a young individual of 20 years.

The clinical presentation of the patient was characterized by abdominal pain, bloody stool, diarrhea, nausea, and vomiting. Concurrently, notable anemia was documented, with hemoglobin values falling below 100 g/L. A precedent colonoscopy performed at an alternative medical facility yielded a diagnosis of the ileocecal lesion with high-grade adenomatous dysplasia and focal malignant transformation following biopsy sampling during endoscopic examination.

Subsequently, the patient underwent a secondary colonoscopy under the auspices of the authors, revealing a digitiform lesion within the cecal lumen. Biopsy sampling of the contiguous cecal mucosa by the authors culminated in identifying mucinous adenocarcinoma of the cecum.

The diagnosis of appendiceal intussusception was only established following the right hemicolectomy with regional lymphadenectomy, as confirmed by histological examination of the surgical specimen. This examination further identified a locally advanced cancer stage (*i.e.* pT3N1M0 or pIII).

## WHAT INSIGHTS CAN BE DRAWN FROM THIS CASE

This intriguing report provides several points for reflection. The authors initially subjected the patient to a radiological assessment using computed tomography, which reported thickening of the ileocecal wall. However, the radiologist only discerned clear signs of intussusception through retrospective post-operative evaluation.

In the context of appendiceal intussusception, the diagnostic performance of computed tomography has been a subject of limited exploration, with only a few instances among the numerous reported cases being diagnosed prospectively [3]. Computed tomography exhibits diagnostic efficacy by identifying a target or sausage-shaped lesion encompassing the appendix. This characteristic appearance, known as the target sign, is attributed to concentric soft tissue and fat layers, delineating the involved bowel wall and the intussuscepted appendiceal fat.

As a result, this underscores how cross-sectional radiological evaluation, as rightfully emphasized by the authors, must be considered in cases of abdominal pain affecting the ileocecal region, particularly in the context of a previously identified ileocecal lesion during the index colonoscopy.

Indeed, the index colonoscopy played a crucial role, as the authors' subsequent endoscopic assessment involved a biopsy of the finger-like lesion (*i.e.* the intussuscepted appendix), which had initially been misinterpreted as a hyperplastic polyp. Moreover, the prior identification of declared dysplasia with focal cancerous aspects during the index colonoscopy likely dissuaded the authors from performing a polypectomy on the intussuscepted appendix, given their predisposition towards recommending a hemicolectomy for the patient. Had such a polypectomy been undertaken, it would have entailed a highly precarious "endoscopic appendectomy" with a considerable risk of intestinal perforation and iatrogenic peritonitis [4].

Regrettably, such occurrences may transpire because intussusception of the vermiform appendix can be easily misinterpreted as a polypoid lesion of the cecum [5]. This misinterpretation may lead practitioners to erroneously opt for a "polypectomy" instead of a more appropriate endoscopic intervention, such as, when feasible, per endoscopic reduction [3,5,6].

Additionally, this report stimulates discussion regarding the imperative for endoscopic expertise to guide and preclude such impulsive endoscopic decisions. This consideration is particularly pertinent when contemplating the atypical appearance of the "pseudo-polypoid" lesion associated with appendiceal intussusception, as also evident from the endoscopic image provided by the authors in their report. The atypical nature of this lesion, precluding a precise endoscopic diagnosis even with the aid of virtual chromoendoscopy techniques, underscores the importance of distinguishing it from a "typical" pedunculated polyp formation (*i.e.* 0-Ip according to the Paris classification [7]).

Nevertheless, the issue of polypectomies performed on intussuscepted appendices is a real concern, as several cases of inverted appendices mistaken for polyps have been documented[8].

Moreover, this case report underscores the rarity of the concurrent occurrence of intussuscepted appendix and mucinous cecal cancer. The inverse scenario, namely intussusception of the cecum with a mucinous tumor of the appendix, has also been documented[9]. Furthermore, when appendiceal intussusception is diagnosed, the potential for malignancy within its context should still be duly considered[10,11].

Additionally, there should probably have been a consideration in the discussion of this report for another aspect: the remarkably young age of the patient diagnosed with a malignant colon neoplasm, notably locally advanced with lymph node metastasis.

An alarming surge in the incidence of colorectal cancer is observed among individuals below the age of 50, delineating the phenomenon known as early-onset colorectal cancer[12]. This demographic, often excluded from widespread international screening initiatives, demonstrates a predilection for early-onset colorectal cancer, predominantly within the distal colon and rectum, frequently manifesting with obstructive symptoms[12]. Furthermore, individuals in this younger cohort tend to present with a comparatively advanced disease stage at the point of diagnosis in contrast to their counterparts aged over 50. Molecularly, these neoplasms exhibit a predilection for poor differentiation coupled with microsatellite instability[12]. Projections indicate that within the ensuing decade, 1/10 to 1/4 of colorectal cancer diagnoses will comprise early-onset colorectal cancer occurring before the age of 50[12]. Putative contributors to this trend encompass obesity, antibiotic usage, intestinal microbiota, and dietary patterns[12,13].

Conclusively, the focus is directed towards this case of cecal cancer, undeniably aligning with the classification of early-onset colorectal cancer. A thorough examination of the anamnestic details provided by the authors did not disclose a clear presence of comorbidities or a significant family history of gastrointestinal pathologies. Unfortunately, the report lacks information on whether the patient was obese, at the very least, engaged in alcohol consumption or smoking habits. Nevertheless, no molecular analyses conducted on the surgical specimen were disclosed in the report. The authors outlined an adjuvant chemotherapy plan (specific therapeutic agents unspecified).

As demonstrated in the authors' report, this evolving shift in epidemiological paradigms frequently challenges clinicians. In the case of a 25-year-old female presenting with nearly 1 mo of abdominal pain and bloody diarrhea, the initial inclination would typically be towards considering inflammatory bowel disease rather than colorectal cancer[14]. Another diagnostic hypothesis could have been infectious colitis[15]. Nevertheless, the objective finding of right lower quadrant abdominal pain, apart from radiological considerations, might have leaned more towards acute appendicitis in this age group. Notwithstanding, the intussusception of the appendix can easily be associated with appendicitis[16-19].

In other words, this report rekindles the awareness that certain epidemiological certainties guiding the exclusion of specific diagnoses must be reconsidered in these profound epidemiological shifts.

Certainly, as described by the authors, the appendix intussusception, in this case, is likely secondary to a mechanical factor associated with the growth of the cecal tumor. However, given the condition's rarity, further investigation of this aspect in future studies is also essential.

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## CONCLUSION

In conclusion, the recently published report on "Appendiceal intussusception complicated by adenocarcinoma of the cecum: A case report" published in the *World Journal of Clinical Cases* sheds light on a rare and intriguing case that intertwines appendiceal intussusception and mucinous cecal cancer. The detailed clinical presentation, diagnostic challenges, and subsequent surgical intervention with right hemicolectomy were meticulously discussed. The importance of considering appendiceal intussusception in the differential diagnosis of abdominal pain, especially in the context of a previously identified ileocecal lesion during colonoscopy, is underscored. The report highlights the limitations and strengths of radiological assessments and emphasizes the need for endoscopic expertise to discern between pseudo-polypoid lesions and typical polyp formations.

Furthermore, the case draws attention to the alarming rise in early-onset colorectal cancer, a demographic often excluded from widespread screening initiatives. The patient's young age and locally advanced disease stage prompt reflection on the evolving epidemiological paradigms surrounding colorectal cancer.

The report catalyzes broader discussions on the evolving landscape of colorectal cancer epidemiology and its rare presentations, urging clinicians to remain vigilant and reconsider traditional diagnostic approaches in the face of emerging trends.

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## FOOTNOTES

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