



## CLINICAL CASE

# The Importance of Alternative Diagnostic Modalities in the Diagnosis of Small Bowel Tumors After a Negative Capsule Endoscopy



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### KEYWORDS

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**Abstract** Capsule endoscopy is widely accepted as the preferred diagnostic test in the evaluation of small bowel diseases, especially in the setting of obscure gastrointestinal bleeding. It has revolutionized small bowel examination and has improved the detection of small bowel tumors. However, small bowel tumors are sometimes missed by capsule endoscopy. Furthermore, there are several recent reports comparing capsule endoscopy with other diagnostic modalities, such as double balloon enteroscopy and CT/RM enterography, that challenge the reportedly high negative predictive value of capsule endoscopy in detecting small bowel tumors.

We report the case of a patient with overt obscure gastrointestinal bleeding due to a gastrointestinal stromal tumor diagnosed by CT enterography after two negatives capsule endoscopies. This case shows that capsule endoscopy may overlook significant life threatening lesions and highlights the importance of using other diagnostic modalities after a negative capsule endoscopy, especially in patients with a high index of suspicion for small bowel tumoral pathology or persistent/recurrent bleeding.

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### PALAVRAS-CHAVE

Endoscopia por  
Cápsula;  
Hemorragia  
Gastrointestinal;  
Intestino Delgado;  
Neoplasias Intestinais

### A Importância da Utilização de Exames Complementares Alternativos no Diagnóstico de Tumores do Intestino Delgado Após uma Enteroscopia por Cápsula Negativa

**Resumo** A enteroscopia por cápsula é um dos principais métodos de diagnóstico de lesões do intestino delgado, em especial no contexto da hemorragia digestiva obscura.

A enteroscopia por cápsula revolucionou a avaliação do intestino delgado e a deteção de tumores. No entanto, os tumores do intestino delgado nem sempre são diagnosticados por

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enteroscopia por cápsula. Vários artigos que comparam a enteroscopia por cápsula com outros métodos de diagnóstico, como a enteroscopia por duplo balão ou a enterografia por tomografia computadorizada/ressonância colocam em causa o elevado valor preditivo negativo da cápsula endoscópica na deteção de tumores do intestino delgado.

Os autores descrevem o caso de uma doente com hemorragia digestiva obscura manifesta devido a um GIST diagnosticado por enterografia por TC abdominal após realização de duas enteroscopias por cápsula que foram negativas. Este caso demonstra que a enteroscopia por cápsula pode não diagnosticar lesões com significado clínico e realça a importância de utilizar outros métodos de diagnóstico, especialmente em doentes com elevado índice de suspeição de tumores do intestino delgado ou hemorragia persistente/recorrente.

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## 1. Introduction

Capsule endoscopy (CE) became a first-line diagnostic tool in obscure gastrointestinal bleeding (OGIB) and has gained a significant role for small bowel (SB) tumor detection and surveillance in polyposis syndromes, mostly in Peutz-Jeghers syndrome (PJS).<sup>1</sup> CE is safe and non-invasive, it enables visualization of the entire small bowel and has been shown to be superior to push enteroscopy, small bowel follow-through and computed tomography in detecting small bowel bleeding lesions.<sup>2-4</sup>

In OGIB, a negative CE has been associated with a low rebleeding risk, and it has been suggested that further investigation of these patients can be reasonably deferred until rebleeding occurs.<sup>5,6</sup> After a negative surveillance CE in PJS, additional investigations must only be performed if persisting clinical symptoms suggest a missed lesion.

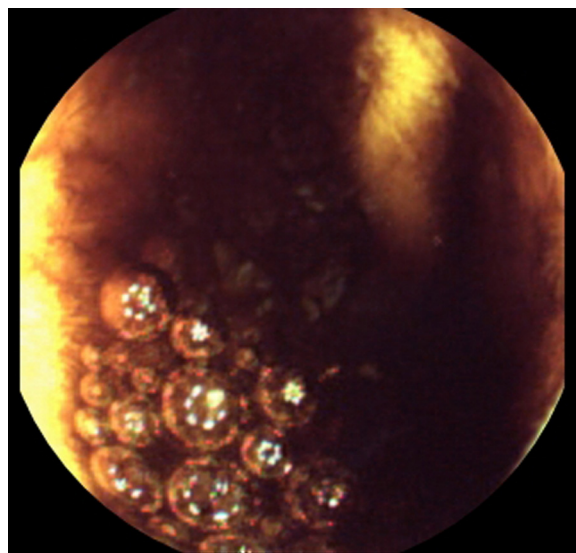
Although highly effective, CE has technical limitations, which increase the risk of missing significant pathology: incomplete small-bowel transit, poor luminal-view quality, visualization of only the mucosal surface, inadequate luminal distension and rapid transit through the duodenum and jejunum. There is increasing evidence concluding that small bowel tumors (SBT) may be missed by CE in patients with OGIB and that a negative CE study does not exclude significant disease, suggesting that double-balloon enteroscopy and CT/MR enterography should be considered as alternative diagnostic methods when clinical suspicion persists.<sup>7-9</sup>

## 2. Clinical case

A 46 year-old woman presented to the emergency department with melena and marked fatigue for 1 week. Two years before, she had a similar clinical episode that was thought to be caused by a duodenal ulcer associated with *Helicobacter pylori* (*H. pylori*) infection. 10-day sequential treatment was indicated and a subsequent histology was negative for *H. pylori*. The patient denied abdominal pain, weight loss or changes in bowel habits. She was not taking any medication including nonsteroidal anti-inflammatory drugs. She

was hemodynamically stable and the abdominal examination was normal.

Laboratory data demonstrated a low hemoglobin level (6.8 g/dl); white blood count, liver tests and C-reactive protein were in the normal range. Upper gastrointestinal endoscopy revealed an 8 mm Forrest III duodenal ulcer; there was no blood in the stomach or duodenum. A same day colonoscopy revealed large amounts of blood in the colon that prevented progression beyond the splenic flexure, even after bowel preparation. The next day, ileocolonoscopy revealed very small amounts of blood in the ileum and colon that were easily removed by water and no lesions in the colon nor in the distal 15 cm of ileum. Based on these results, a CE (after 12 h of fasting and without bowel preparation) was performed 36 h later. It revealed no blood or lesions in the entire small bowel, although the observation of the ileum was hampered by some luminal content (Fig. 1). The next day, after transfusion of two units of red blood cells, she



**Figure 1** Capsule endoscopy: residual luminal content in the ileum.

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