

## Clinical Case Study

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# Intestinal Obstruction of Uncommon Cause and Point-of-Care Ultrasonography – Where Do We Stand?

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## Keywords

Jejunal adenocarcinoma · Point-of-care ultrasonography · Intestinal obstruction · Small bowel tumor

## Abstract

Malignant neoplasms of the small bowel, especially from the jejunum, are among the rarest types of cancer. Given its location, a delayed diagnosis is frequent and sometimes only made in an emergency context. The authors present a case of intestinal obstruction, where ultrasonography was pivotal in establishing a diagnosis. Point-of-care ultrasonography seems to be particularly sensitive in assessing emergency patients with abdominal pain, allowing effective orientation and saving human and technical resources.

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## Obstrução Intestinal de Causa Rara e Ecografia *Point-of-Care* – Em que Ponto Nos Encontramos?

### Palavras Chave

Adenocarcinoma do jejuno · Ecografia *point-of-care* · Obstrução intestinal · Tumor de intestino delgado

### Resumo

As neoplasias malignas do intestino delgado, particularmente as do jejuno, estão entre os tipos de tumores mais raros. Devido à sua localização, é frequente existir um atraso no diagnóstico e muitas vezes apenas em contexto de emergência a situação é solucionada. Os autores apresentam um caso de obstrução intestinal, onde a ecografia realizada por gastroenterologista foi fundamental no estabelecimento diagnóstico. A ecografia *point-of-care* parece ser muito sensível no diagnóstico em urgência, nomeadamente em doentes com dor abdominal, permitindo orientação adequada e poupando recursos humanos e técnicos.

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## Introduction

Malignant neoplasms of the small bowel are among the rarest types of cancer, accounting for only 2% of all gastrointestinal neoplasms. In Western countries, adenocarcinomas generally represent the largest histological type; in the small bowel, the duodenum is its most frequent location [1]. For neoplasms from the jejunum and ileum, diagnostic delays range from months to years. Many patients are misdiagnosed as being neurotic or as having irritable bowel syndrome [2]. It is sometimes only due to emergency situations that a correct diagnosis is finally established. Concepts like bedside ultrasonography (US) and point-of-care US are becoming routine in our clinical practice, expanding the possible applications of US, thus sharing the importance of ultrasound knowledge between senior physicians and residents of several specialties [3].

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## Case Report

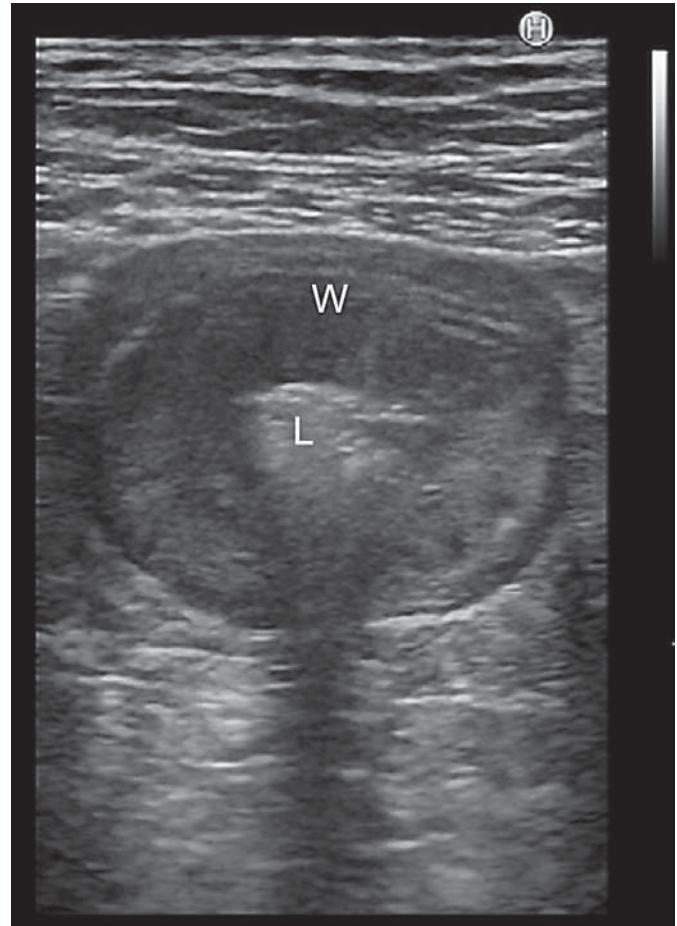
We report the case of a 79-year-old male, without a relevant medical history, who presented with a 5-month history of weight loss, vomiting, and periumbilical cramping. The initial evaluation showed microcytic anemia and hypoalbuminemia. Later, upper gastrointestinal endoscopy, colonoscopy, and abdominal and pelvic CT scans were performed but demonstrated no relevant findings. Because of clinical worsening with daily vomiting and abdominal tenderness, the patient returned to the emergency room. An US evaluation with a linear probe was performed by a gastroenterologist who observed a 3-cm-long, jejunal, obstructive lesion, with irregular intestinal wall thickness and loss of stratification (Fig. 1, 2), increased stiffness on elastography (Fig. 3), and increased vascularization on Doppler (Fig. 4). A proximal dilatation of the duodenum and the jejunum (Fig. 2) was also noted, indicating an obstruction of the small bowel. No local adenopathies were seen.

After clinical discussion, segmental enterectomy was performed. Histology showed a jejunal adenocarcinoma (based on the surgical sample and anterior radiologic findings, the tumor's stage was T3N0M0). Six months later, the patient remains well and without complaints. A retrospective evaluation of the CT scan performed 3 months before surgery showed a slight thickening of the enteric wall that could have corresponded to the tumor later found in the emergency room.

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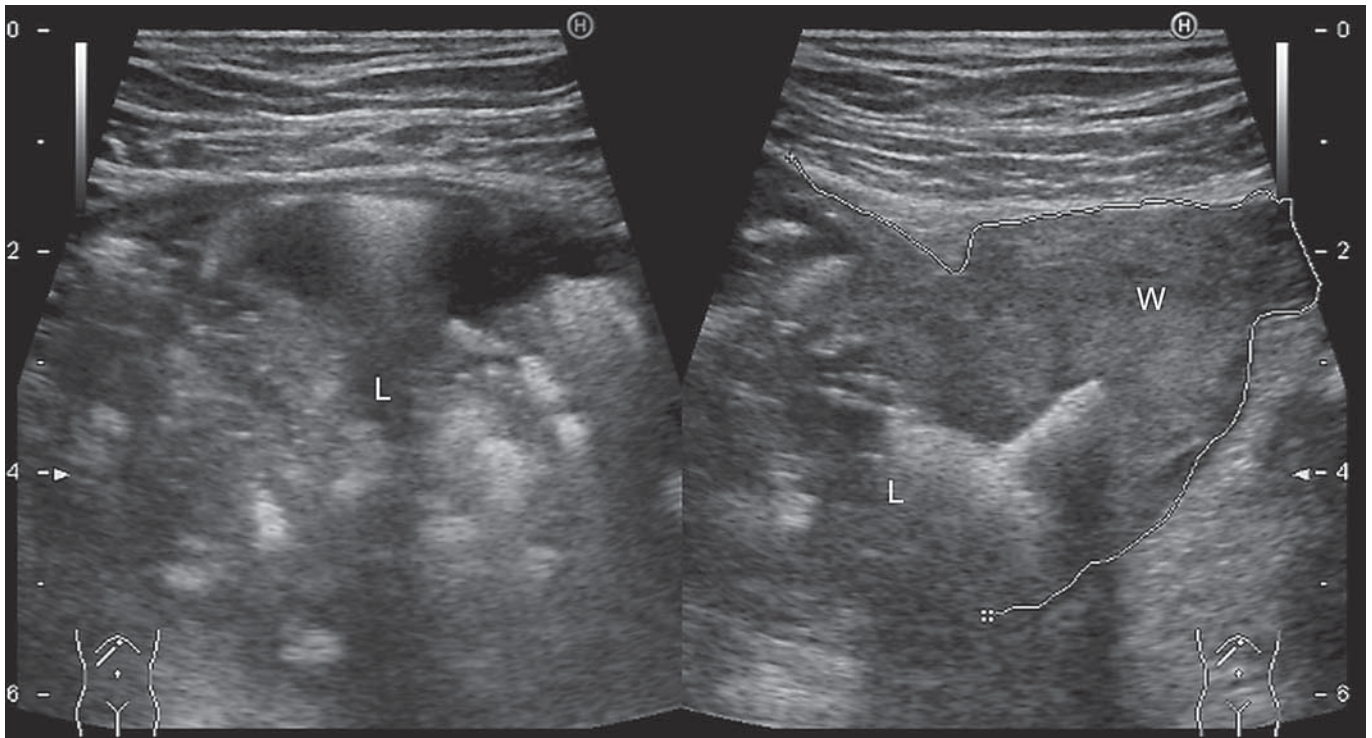
## Discussion

Malignant neoplasms of the small bowel are rare entities. The duodenum seems to be the most frequently affected segment with 55–82% of all cases [4]. The estimated incidence in the United States is around 7 per 1

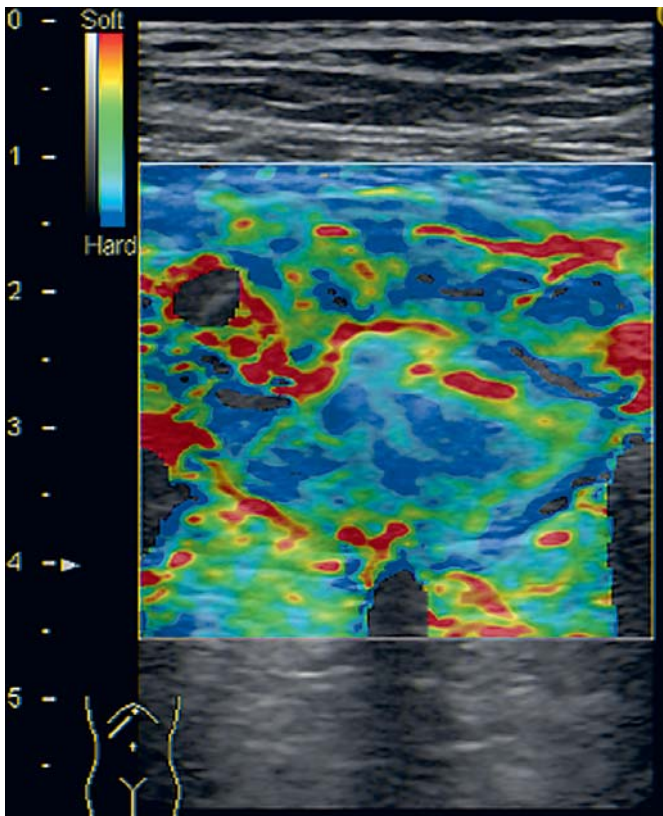


**Fig. 1.** Wall thickness and loss of stratification. W, wall; L, lumen.

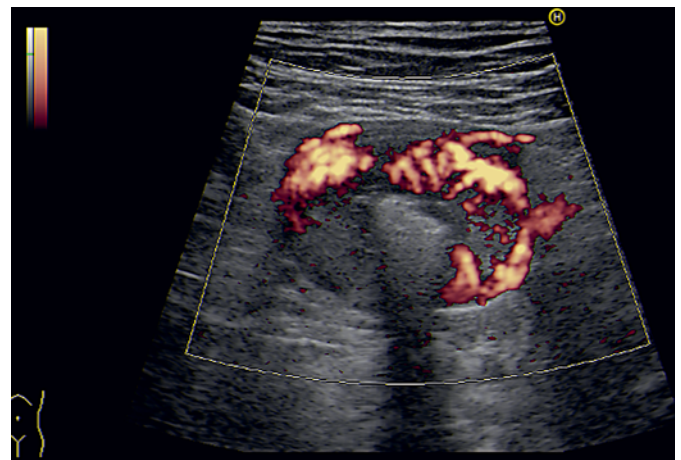
million individuals [5]. In Europe, an incidence rate of 3,600 new cases per year has been reported [6]. The strongest known risk factor for small bowel adenocarcinoma is prior Crohn's disease [7]. Other suggested factors include cigarette smoking, alcohol consumption, prior peptic ulcer disease, familial adenomatous polyposis, prior colon cancer, celiac sprue, and cystic fibrosis [1]. With none of the risk factors (as in the present case), a jejunal adenocarcinoma is an even rarer diagnosis. Recently, Young et al. [8] have revealed that surgery seems to be the only treatment that improves survival on small bowel adenocarcinoma, and no benefit was seen by adding chemotherapy regimens. Even so, the 5-year survival rate after diagnosis is around 30% [5]. The clinical, ultrasound-assisted approach has proved to be particularly sensitive in assessing emergency patients with nodules of the neck, dyspnea, abdominal pain, and limb edema [9].



**Fig. 2.** Wall thickness and loss of stratification. Proximal luminal dilatation with enteric heterogeneous content. W, wall; L, lumen.



**Fig. 3.** Elastography showing increased stiffness.



**Fig. 4.** Doppler showing increased vascularization.

We present this case because of the rarity of the previously described entity, but also to exhibit that point-of-care US allows a quick and effective patient orientation, with innumerable clinical applications, saving human and technical resources, and showing once more that US competences should be transversely acquired perhaps by all physicians.

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### Statement of Ethics

This study did not require informed consent or review/approval by the appropriate ethics committee.

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### Disclosure Statement

All authors declare no conflicts of interest.

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