

# A CASE OF LAPAROSCOPIC-ASSISTED TREATMENT OF SMALL BOWEL INTUSSUSCEPTION DUE TO METASTASES FROM MALIGNANT MELANOMA - A WORD OF CAUTION

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## ABSTRACT

During the last four decades, the laparoscopic surgery gradually underwent a full recognition and nowadays it is a “gold standard” treatment for many elective conditions and recently in a wide variety of emergent conditions. However, its use in bowel obstruction is still under debate, and high-level evidence is lacking.

Herein we present a case of 36-year-old man with small bowel intussusception due to metastases from melanoma treated laparoscopically. Diagnostic challenges and pitfalls of laparoscopic treatment are discussed.

Multiple gastrointestinal metastases should be considered in all cases with small bowel obstruction and a history of melanoma. Although laparoscopy is increasingly used in emergency setting and appears to be the feasible and safe treatment of small bowel obstruction, it should be used with a caution in cases with suspected metastasized malignant melanoma.

**KEYWORDS:** melanoma, small bowel metastases, intussusception, laparoscopic surgery

## Introduction

After the first laparoscopic intervention done by Kurt Semm in 1972, the laparoscopic surgery gradually received a full recognition and nowadays is a “gold standard” in the elective surgery. During the last decades, it has been increasingly used in an emergency setting. A recent Italian survey reported an increase in the emergency laparoscopic procedures from 24.7% in 2010 to 30.3 in 2014 [1]. The most common indications are acute appendicitis,

cholecystitis, perforated duodenal ulcer and Hinchey III acute diverticulitis. However, its use in bowel obstruction is still under debate, and high-level evidence is yet lacking [2]. In the vast majority of the cases, it is undertaken due to adhesive ileus with the highest success rate in single-band obstruction [3].

## Case presentation

A 36-year-old man was admitted to Emergency department complaining of colicky abdominal pain and vomiting lasting for 5-6 hours. He was referred from a gastroenterologist with primary diagnosis acute cholecystitis. The physical examination showed a slightly distended abdomen with marked asymmetry due to a painful lump in the upper left quadrant. X-ray of the abdomen was consistent with small bowel obstruction (fig.1).

The focused ultrasound examination of the upper left quadrant revealed finding consistent with intussusception (fig. 2). Twenty-six months ago melanoma of the left cheek with local lymph nodes involvement was diagnosed and was treated by local excision, removal of the left parotid gland and modified neck lymph node dissection. The tumor was assessed as T1aN2M0,

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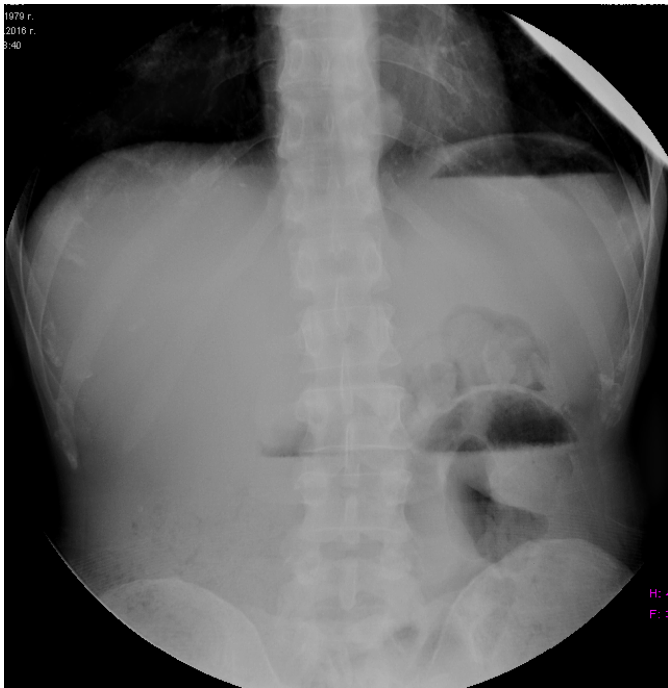
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**Figure 1:** Abdominal X-ray demonstrating small bowel ileus.

grade II according to Clark, BRAF-negative. The patient was treated with BCG vaccine, Y-Interferon and eight courses Dacarbazine. Due to the progression of the disease proven by PET-scan (limited muscle, bone, and retroperitoneal deposits) Ipilimumab (anti-CTLA-4, six courses) and subsequently Nivolumab (anti-PD-1) were added.

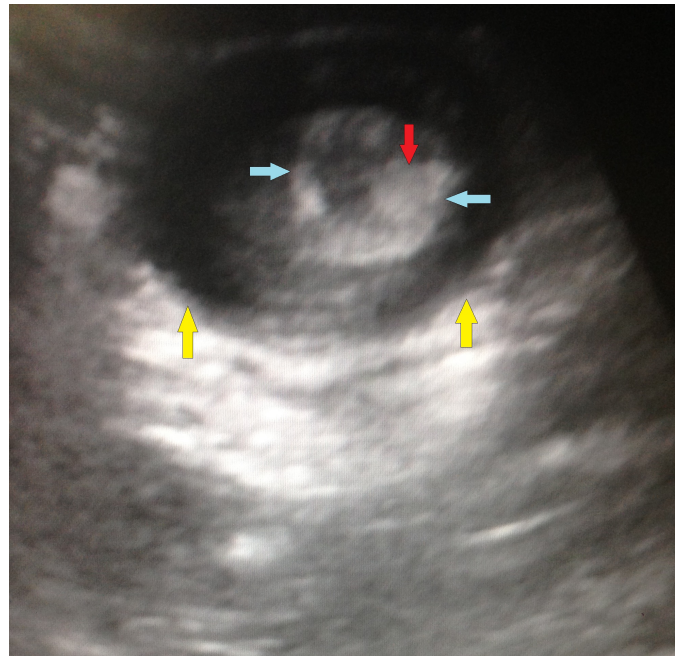
At laparoscopy, a small bowel intussusception due to intraluminal tumor was found. No visible metastases in the abdominal cavity were found except one near the inferior vena cava. Because the laparoscopic reduction failed a limited small bowel resection with end-to-end anastomosis via 5, cm laparotomy was performed. A month later the symptoms of ileus recurred. The laparoscopy found two new intussusceptions (Fig. 3).

A conversion was made due to impossible reduction and to perform the careful thorough inspection. Multiple intraluminal tumors were found which were overlooked during the first intervention. A resection of jejunum encompassing both intussusceptions was conducted with end-to-end anastomosis. Gross examination of the specimen showed multiple intraluminal tumors with enlarged mesenteric lymph node (Fig. 4, 5).

Microscopic examination confirmed metastatic melanoma with Ki-67 40%. The patient had an uneventful recovery and was discharged on the eight postoperative days. Three months after the intervention he underwent radiotherapy of the neck due to a local recurrence. Unfortunately, on the background of continued therapy with Nivolumab disease progressed with development of multiple brain and cutaneous metastases five months after the second intervention.

## Discussion

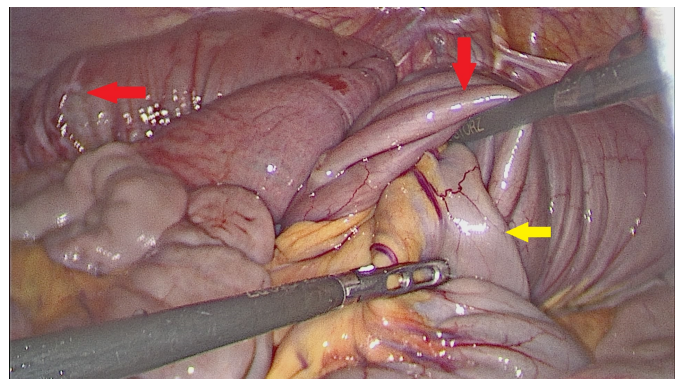
A small bowel intussusception in adults is rare accounting for only 1-5% of all intestinal obstructions. In contrast to children in most cases, it is secondary to different bowel pathologies (primary tumors, metastases, foreign bodies, Meckel's diverticulum), postoperative or inflammatory adhesions [4]. In 8-20%



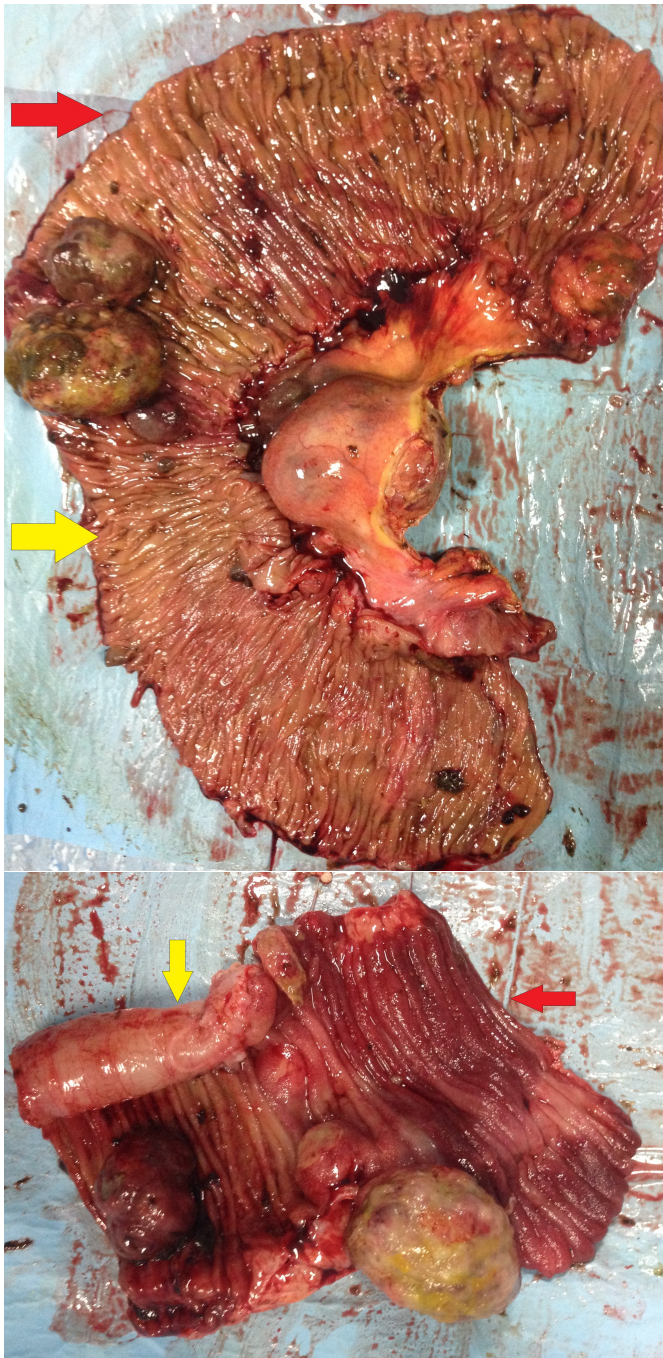
**Figure 2:** US view – the proximal segment, intussusceptum (yellow arrows), the lumen of the distal segment, intussusciens (blue arrows) and the intraluminal metastasis (red yellow).

of the cases, the etiology is unknown. Most gastrointestinal melanomas represent metastases from a primary cutaneous lesion with the frequency of approximately 60 at autopsy. The small bowel is affected in 50% of the cases [5] and is considered as a specific metastatic site for melanoma [6]. However, only 2-5% of them are symptomatic. Although several case reports have been reported in the literature the exact frequency of small bowel intussusception due to melanoma metastatic melanoma is difficult to be estimated. The metastases are usually multiple and sometimes can easily be overlooked as in our case and even after conversion to open surgery as in the case of Kouladouros et al. [6].

In contrast to the abdominal ultrasound, the abdominal helical computed tomography (CT) is a gold standard due to its high specificity and sensitivity for determining the etiology, level and degree of the obstruction [7, 8]. The typical imaging of intussus-



**Figure 3:** Laparoscopic view of the second intervention – two intussusceptions marked with red arrows (the dilated proximal segment - intussusceptum) and the distal segment - intussusciens (yellow arrow).



**Figure 4,5:** The resected specimens during the second intervention - intussusceptum (red arrow) and intussusciptens (yellow arrow).

ception with target-like appearance has an accuracy of 90% [7]. In our case, we did not perform preoperative CT which retrospectively was considered as a mistake led to the subsequent re-admission and re-laparotomy. Nevertheless, in cases of small bowel melanoma, it has limited sensitivity and specificity, 58% and 66%, respectively [9]. The most common pattern is multiple polypoid lesions equally distributed in the jejunum and ileum [9].

In 2001 Soto et al. reported the benefits of laparoscopy both as a diagnostic and therapeutic tool in gallstone ileus [10]. However, other authors reported a case with overlooked secondary stone highlighting the difficulties of laparoscopic exploration [11]. In a review of over 2 000 cases with small bowel ileus treated laparoscopically, O'Connor and Winter reported conversion rate 29% with 15% morbidity and 1.5% mortality [3]. Despite its feasibility and potential benefits, the Cochrane based review of comparative trials stressed the need for high quality randomized trials [2].

### Conclusion

Multiple gastrointestinal metastases should be considered in all cases with small bowel ileus and history of melanoma. Although laparoscopy has been increasingly used in an emergency setting and appears feasible and safe in benign small bowel obstruction, it should be used with a caution in cases with suspected metastasized malignant melanoma due to a multiplicity of the metastases and the difficult exploration.

### Authors' Statements

#### Competing Interests

The authors declare no conflict of interest.

### Disclosure

A written consent form for publication was obtained and signed by the patient.

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