Journal de la Faculté de Médecine d'Oran

CAS CLINIQUE

Intussusception of the small intestine due to an intestinal melanoma metastasis : a case report & literature review

Smain Nabil MESLI [1], Karim BERTAL [1], Ryadh INAL [1], Anisse TIDJANE [2]

1 Department of General Surgery -A- ,CHU-Tlemcen, Faculty of Medicine, Aboubeker University BELKAID, experimental laboratory surgery, Tlemcen, Algeria
2 Department of Hepatobiliary surgery and liver transplantation, EHU-1st November 1954, Faculty of Medicine, University of Oran 1, Algeria

Corresponding author: smesli705@gmail.com submitted February 8, 2024 ; accepted June 12, 2024 ; published online June 30, 2024

Citation: MESLI SN et al Intussusception of the small intestine due to an intestinal melanoma metastasis, a case report & literature review (2024) J Fac Med Or 8 (1) : 1009-1014.

DOI : https://doi.org / 10.51782/jfmo.v8i1.225

KEY WORDS

Melanoma, Metastasis, Intussusception, Surgery, Intestinal obstruction, Emergency

Abstract

Intussusceptions of the small intestine in adults is very rare and represents only 1% of all cases of intestinal obstruction; this condition is rarely described in the literature. Surgery is the procedure of choice in most cases.

We report a case of ileo-ileal intussusceptions secondary to a melanoma metastatic tumor, occurring 4 years after surgery for malignant melanoma of the cheek.

The diagnosis of intussusception was confirmed by abdominal CT-Scan. However, only palliative surgery was feasible for this patient. At seven months after his surgery, the patient is alive and in good general condition. Intussusception in adults is the main clinical presentation indicative of intestinal metastasis from malignant melanoma. After our review of the literature, it seems that this complication occurs mainly in male patients and the site of predilection for this metastasis is the jejunum.

Introduction

Small bowel intussusception in adults is very rare and represents 1% of all acute bowel obstruction cases, with only 5% of all intussusception cases being diagnosed in adults [1, 2]. It is usually caused by benign or neoplastic bowel lesions [3, 4].

However, most small intestine obstructions due to tumor-induced intussusception remain rare; therefore, intussusception caused by melanoma metastases has rarely been described in the literature. Surgery is the preferred management option for such complications [1, 2].

Here, we present a case of a 45-year-old man with ileo-ileal intussusception caused by metastatic melanoma four years after he had undergone excision of a malignant melanoma on the left cheek.

Observation

A 42-year-old man was admitted to our emergency department for acute intestinal obstruction. The patient had complained of abdominal pain, nausea, and intermittent vomiting for two weeks before admission. These symptoms worsened with increasingly frequent vomiting, abdominal distension, and complete cessation of intestinal transit. Indeed, four years prior, the patient had undergone resection of malignant cutaneous melanoma of the left cheek, followed by chemotherapy. It's important to note that no lymphadenectomy was performed during the initial surgery.

Upon admission, the patient's general condition was slightly altered, with a blood pressure of 120/70 mmHg, a pulse of 90 beats per minute, and abnormal blood test results: white blood cell count elevated to 16,000/ml, hemoglobin at 8.96 g/dl, prothrombin level at 89%, blood urea at 0.80 g/l, creatinine at 11.70 mg/l, hyponatremia at 128 meq/l, and potassium level at 4.1 meq/l.

A standard abdominal X-ray revealed air-fluid levels indicative of small bowel obstruction. Abdominal computed tomography (CT-scan) confirmed that the cause of this acute intestinal obstruction was an intussusception associated with an ileal tumor, along with satellite metastatic lymphadenopathy (**Figure 1**).

Urgently admitted to the operating room, the patient underwent an open approach with a midline laparotomy. Exploration revealed an ileo-ileal intussusception caused by an ileal tumor (**Figure 2**), along with other tumor localizations and multiple lymphadenopathy (**Figure 3**). Surgical reduction of the invaginate loop was performed, revealing a dark black tumor causing intussusception, along with mesenteric lymphadenopathy. Similar but smaller tumors were found in the small intestine (**Figure 4**).

A palliative surgery involved resection of the invaginate ileal loop followed by end-to-end anastomosis due to the presence of several unresected metastases in the intestine. The postoperative stay was uneventful, and the patient was discharged on the 7th postoperative day.

The final histological examination of the resected specimen revealed that the intussusception was caused by a metastasis of a malignant melanoma measuring 85 mm in diameter. The microscopic examination described a malignant tumor proliferation made up of melanocyte cells infiltrating the entire intestinal wall with respect for the intact serosa; the resection margins were free. Invasion of two lymph nodes by the same proliferation was also noted. Immuno-histochemical staining confirmed that the tumor was a metastatic melanoma, and this tumor was BRAF mutated status.

After discussion, the multidisciplinary committee decided to refer the patient to oncology for chemotherapy based on a Dacarbazine regimen. At 7 months post-surgery, the patient remains alive and in good general condition.

Figure 1. CT-Scan : small bowel intussusception

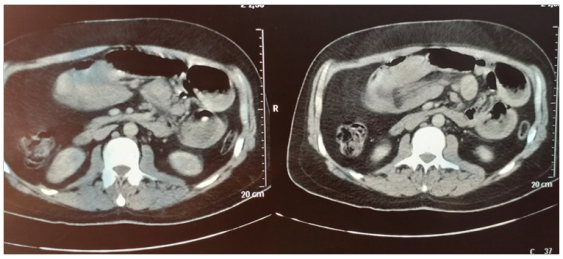
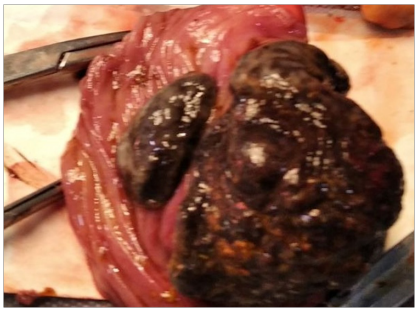


Figure 2. Ileo-ileal intussusception & tumor

Figure 3. Other tumor localization

Figure 4. Appearance of the tumor after resection



Discussion

Intussusception in adults accounts for only 1% of cases of intestinal obstruction [5], while malignant gastrointestinal melanoma represents 1% of malignant tumors, with most being primary tumors that metastasize from the skin [6]. Hintz concluded that malignant cutaneous melanoma is the most frequent extra-digestive tumor to metastasize to the digestive tract several years later [7]. This is evident in our patient, who had a skin tumor on the left cheek treated four years ago with chemotherapy after surgical excision.

However, up to 60% of patients with gastrointestinal metastases are never diagnosed during their lifetime [8]. The symptoms are often nonspecific, including abdominal pain, vomiting, and sometimes indicative of intestinal obstruction [5]. Dokić reported a case of deep anemia associated with melena [9].

In our patient, intestinal intussusception was suspected on abdominal CT-scan. The diagnosis of intussusception was primarily made through abdominal CT-scan in most cases described in the literature [5, 6, 9].

Acute intestinal obstruction is a surgical emergency. Surgical exploration confirms intussusceptions and provides information about the extension and location of the disease. Surgery also allows for the treatment of acute intestinal obstruction by excising the digestive segment containing the metastasis that caused intussusception.

This can prevent recurrence and reduce symptoms. While the majority of authors use open surgery for these patients, some recent reports describe successful treatment with laparoscopic procedures [6,10]. We emphasize the importance of haptic sensation to detect small, often endo-luminal, and palpable but not visible metastases.

The median survival of patients operated on for digestive metastases of melanomas was 9.5 months, with a 5-year survival rate not exceeding 9%, according to Caputy et al [11]. After analyzing his series of 41 patients, he identified factors predicting poor prognosis in operated patients, such as the rapid appearance of metastases after treatment of the primary tumor (less than two years), the presence of small bowel metastasis, and a low patient's performance status [11].

In cases of widespread metastases, palliative chemotherapy becomes essential. It aims to alleviate symptoms, enhance quality of life, and possibly extend survival. In case of metastatic melanoma, chemotherapy options like dacarbazine, temozolomide, or immune checkpoint inhibitors are recommended. While not curative, palliative chemotherapy can manage symptoms and slow disease progression [12].

The table 1 summarizes similar cases published over the past five years, identified through a PubMed search using the keywords: melanoma, metastasis, intussusceptions.

Table 1. The following table summarizes similar cases published over the past five years

Author(year)	Country	Gender (age)	Delay after melanoma surgery	Localisation of metastasis	Localisation of intussusception	Management	Outcomes
Giakoustidis et al (2017)	Greece	F (45 yrs)	7 years	jejunum	Jejuno-jejunal	Resection & anastomosis (open)	3 years (Alive)
Hintze et al (2017)	Ireland	F (71 yrs)	9 years	Disseminated	Multiple	Reduction (laparoscopy converted to open)	9 months (Died)
Mahir (2017)	Russia	M (73 yrs)	6 years	Disseminated	Ileo-ileal	Reduction + ileo-transverse derivation (open)	2 months (Alive)
Miyazawa et al (2017)	Japan	M (85 yrs)	18 months	Disseminated	Ileao-coecal	?	2 months (Died)
Silva et al (2018)	Portugal	M (71 yrs)	7 years	ileum	Ileo-ileal	Resection and anastomosis (open)	31 months (Died)
Dokić et al (2018)	Slovenia	M (71 yrs)	7 years	Jejunum	Jejuno-jejunal	Reduction + enterotomy and tumor resection (open)	?
Butt et al (2019)	U.S.A	F (46 yrs)	11 years	Jejunum	Jejuno-jejunal	Resection (open)	6 months (Alive)
Ahmed et al (2019)	U.S.A	F (45 yrs)	5 years	Jejunum	Jejuno-jejunal	Resectio (Laparoscopy)	?
Kumano et al (2020)	Japan	F (71 yrs)	5 years	Jejunum	Jejuno-jejunal	Resection and anastomosis (Laparoscopy)	1 year (Alive)
Warschauer et al (2020)	Italy	M (73 yrs)	5 years	Jejunum	Jejuno-jejunal	Resection and anastomosis (Laparoscopy)	?
Yoneaga et al (2021)	Japan	M (85 yrs)	15 months	Disseminated	Multiple	Resection (open)	?
Correia de Sá et al (2021)	Portugal	M (71 yrs)	2 years	Jejunum	Jejuno-jejunal	Resection and anastomosis (open)	? (Died)
Yagmur et al (2021)	Turkey	M (71 yrs)	4 years	Jejunum	Jejuno-jejunal	Resection and anastomosis (Laparoscopy)	?
Mesli et al (2022)	Algeria	M (46 yrs)	4 years	Disseminated	Ilei-ileal	Resection and anastomosis (open)	7 months (Alive)

Conclusion

Intussusception in adults secondary to a metastatic tumor is a rare cause of small bowel obstruction. Our case, involving a metastatic melanoma originating from a cutaneous lesion on the left cheek excised four years earlier, highlights the rarity and complexity of this condition. However, the prognosis for such cases remains poor, further compounded by the presence of unresected metastatic localization in our patient.

Competing interests

The authors declare no conflict of interest.

References

1. Barussaud M, Regenet N, Briennon X, De Kerviler B, Pessaux P, Kohneh-Sharhi N, et al. Clinical spectrum and surgical approach of adult intussusceptions: a multicentric study. International Journal of Colorectal Disease. 2006;21(8):834-9.

2. Azar T, Berger DL. Adult intussusception. Annals of surgery. 1997;226(2):134.

3. Agha FP. Intussusception in adults. American Journal of Roentgenology. 1986;146(3):527-31.

4. Begos DG, Sandor A, Modlin IM. The diagnosis and management of adult intussusception. The American Journal of Surgery. 1997;173(2):88-94.

5. Giakoustidis A, Goulopoulos T, Boutis A, Kavvadias G, Kainantidis A, Zaraboukas T, et al. Jejunojejunal Intussusception due to Metastatic Melanoma Seven Years after the Primer. Case reports in surgery. 2017;2017.

6. Ahmed M, Abbas H, May Abdulsalam SJ, Saeed R. Small Bowel Intussusception Caused by Metastatic Melanoma: A Case Report. Cureus. 2019;11(7).

7. Hintze JM, O'Connor DB, Molony P, Neary PC. Distant melanoma causing small bowel obstruction. Journal of surgical case reports. 2017;2017(2).

8. Schuchter LM, Green R, Fraker D. Primary and metastatic diseases in malignant melanoma of the gastrointestinal tract. Current opinion in oncology. 2000;12(2):181-5.

9. Đokić M, Badovinac D, Petrič M, Trotovšek B. An unusual presentation of metastatic malignant melanoma causing jejuno-jejunal intussusception: a case report. Journal of medical case reports. 2018;12(1):1-4.

10. Kumano K, Enomoto T, Kitaguchi D, Owada Y, Ohara Y, Oda T. Intussusception induced by gastrointestinal metastasis of malignant melanoma: A case report. Int J Surg Case Rep. 2020; 71: 102–106. doi: 10.1016/j.ijscr.2020.03.026, PMCID: PMC7242997.

11. Caputy G.G., Donohue J.H., Goellner J.R., Weaver A.L., Metastatic melanoma of the gastrointestinal tract. Results of surgical management, Arch. Surg. 126(1991) 1353–1358, http://dx.doi.org/10.1001/archsurg.1991.01410350043007, PMID: 1720950.

12. Luke JJ, Schwartz GK. Chemotherapy in the management of advanced cutaneous malignant melanoma. Clin Dermatol. 2013 May-Jun;31(3):290-7. doi: 10.1016/j.clindermatol.2012.08.016. PMID: 23608448.

-