Primary gastric melanoma: A case report

Emmanuel Eustathios Lagoudianakis, Michael Genetzakis, Dimitrios Konstantinos Tsekouras, Artemisia Papadima, Georgia Kafiri, Konstantinos Toutouzas, Vaggeliogianissi Kateryannakis, Andreas Manouras

Abstract
Melanoma accounts for 1-3 per cent of all malignant tumors. Except cutaneous, other less common melanomas include, among others, those in the GI tract. However, their primary or secondary nature is often difficult to establish. Referring to the stomach, scattered cases of primary melanomas have been reported in the literature.

We report a case of a man with an ulcerated submucosal mass at the antrum of the stomach, manifested with dull upper abdominal pain, nausea, vomiting, fatigue and anemia. This lesion was histologically proved to be melanoma. A detailed clinical and laboratory investigation revealed no primary site elsewhere.

To our knowledge, very few cases of primary gastric melanoma have been reported. Our case is the fourth ever published and the first located at the antrum of the stomach. The debate upon the primitive nature of such lesions still persists. Thus, specific diagnostic criteria have been proposed.

© 2006 The WJG Press. All rights reserved.

Key words: Primary gastric melanoma; Manifestations; Diagnosis

CASE REPORT
A 58-year-old male was referred to our clinic with a short history of nonspecific symptoms, including nausea, vomiting, dull upper abdominal pain and fatigue, aggravating in intensity over the last 24 h. He had a weight loss of 8 kg over the preceding 3 mo. Clinical examination was unremarkable and laboratory examination showed anemia (Ht: 28%). A fecal occult blood test was negative. Colonoscopy was negative. Endoscopic examination of the upper GI tract revealed a submucosal mass with ulceration at the antrum, 3 cm × 5 cm in size. Biopsy, conducted during endoscopy, revealed a malignant melanotic lesion. Gastric mucosa proved to be infiltrated, by numerous pleomorphic tumor cells with melanin deposits (Figure 1).

At exploratory laparotomy a melanotic lesion was found at the antrum with numerous melanotic lesions identified at the greater omentum (Figure 2). Subsequently, a subtotal gastrectomy with splenectomy was carried out.

Pathological report on the surgical specimen proved the melanotic nature of the tumor. The gastric malignant melanoma was extending through the muscularis propria without invading the serosa. The excised lymph nodes were examined and found negative for metastases and complete excision of the ulcerated lesion was reported. Deposits of
malignant melanocytes, accumulated after migrating from the antrum to the greater omentum through the extensive vascular and lymphatic vessels, were ascertained in the co-excised omentum. Microscopic evaluation showed nests and sheets of epithelioid cells stained positive with Fontana-Masson (Figure 3). Immunohistochemical examination revealed a positive reaction with S-100 protein and HMB-45 antibodies (Figure 4).

The postoperative clinical investigation, as well as the follow-up did not reveal any other primary site. Ophthalmologic and dermatologic examinations were negative. In addition, anoscopy, chest CT and small-bowel barium contrast radiography were also negative for a primary site of melanoma.

The patient denied any further adjuvant therapy. Sixteen months after the operation he is disease-free, as follow-up endoscopic examination of the upper GI tract and abdominal CT revealed no signs of recurrence.

DISCUSSION

Non-cutaneous melanoma represents a rare form of melanoma. In a review of 84,836 cases of melanoma between 1985 and 1994, 91.2% were cutaneous, 5.2% ocular, 1.3% mucosal and 2.2% of unknown primary. Referring to GI mucosal sites, melanoma has been reported to arise in esophagus, anorectum and small intestine. Moreover, scattered cases of primary melanoma arising in the stomach have also been reported.

The proposed primary sources, from which GI melanomas are derived, are melanoblastic cells of the neural crest, which migrate to the ileum through the omphalomesenteric canal or APUD cells, which undergo neoplastic transformation. Although, there have been no reports on benign melanocytes in normal gastric epithelium, melanosis of the gastric mucosa in association with esophageal and anal malignant melanoma has been reported. Furthermore, the rare presence of melanosis of the esophageal mucosa is accounted for the occurrence of primary esophageal melanoma. Thus, it seems reasonable that primary gastric melanoma should be considered possible.

In order to avoid running the risk of misinterpretation of a metastasis to the gastric wall to primary lesion, several reports have issued criteria for the diagnosis of primary melanoma. Suggestive criteria of the primary nature of gastric melanoma include lack of concurrent or previous removal of a melanoma or atypical melanotic lesion from the skin, lack of other organ involvement and in-situ change in the overlying or adjacent GI epithelium. The latter, recognized histologically by the presence of atypical melanotic cells in the basal layer of the epithelium and extending in a “pagetoid” fashion into the more superficial epithelium, may be reported in 40%-100% of primary GI melanomas. Additionally, disease free survival of at least 12 mo after curative surgical excision of the involved organ has been proposed as a criterion for the distinction of a primary lesion from metastatic since 50% of patients
REFERENCES

1. Frost DB, Mercado PD, Tyrrell JS. Small bowel cancer: a 30-year review. Ann Surg Oncol 1994; 1: 290-295
2. Reintgen DS, Thompson W, Garbutt J, Seigler HF. Radiologic, endoscopic, and surgical considerations of melanoma metastatic to the gastrointestinal tract. Surgery 1984; 95: 635-639
3. Backman H. Metastases of malignant melanoma in the gastrointestinal tract. Gastrointest 1969; 24: 112-120
4. Ihde JK, Coit DG. Melanoma metastatic to stomach, small bowel, or colon. Am J Surg 1984; 147: 1-6
5. Chandler AB, Jones GF. Malignant melanoma of the gastrointestinal tract: a case report. Am Surg 1951; 17: 719-721
6. Macák J. Melanoma of the stomach: reality or fiction? Pathologica 1998; 90: 388-390
7. Tabaei HA, Citta RJ, Gallo L, Biondi RJ, Medei FC, Silverman D. Primary malignant melanoma of the small intestine: report of a case and discussion of the APUD cell concept. J Am Osteopath Assoc 1984; 83: 374-377
8. Krausz MM, Ariel I, Behar AJ. Primary malignant melanoma of the small intestine and the APUD cell concept. J Surg Oncol 1978; 10: 283-288
9. Chang AE, Karnell LH, Menck HR. The National Cancer Data Base report on cutaneous and noncutaneous melanoma: a summary of 84,836 cases from the past decade. The American College of Surgeons Commission on Cancer and the American Cancer Society. Cancer 1998; 83: 1664-1678
10. Sachs DL, Lowe L, Chang AE, Carson E, Johnson TM. Do primary small intestinal melanomas exist? Report of a case. J Am Acad Dermatol 1999; 41: 1042-1044
11. Chalkiadakis G, Wihlm JM, Morand G, Weill-Bousson M, Witz JP. Primary malignant melanoma of the esophagus. Ann Thorac Surg 1985; 39: 472-475
12. Kadivar TF, Vanek VW, Krishnan EU. Primary malignant melanoma of the small bowel: a case study. Am Surg 1992; 58: 418-422
13. Alazmi WM, Nehme OS, Regalado JJ, Rogers AI. Primary gastric melanoma presenting as a nonhealing ulcer. Gastrointest Endosc 2003; 57: 431-433
14. Elsayed AM, Alhurfa M, Nseako UC, Sobin LH. Malignant melanomas in the small intestine: a study of 105 patients. Am J Gastroenterol 1996; 91: 1001-1006
15. Horowitz M, Nobrega MM. Primary anal melanoma associated with melanosis of the upper gastrointestinal tract. Endoscopy 1998; 30: 662-665
16. Germano D, Rosati G, Romano R, Vita G, Lepore G, De Sanctis D, Manzione L. Primary gastric melanoma presenting as a double ulcer. J Clin Gastroenterol 2004; 38: 828
17. Christova S, Meinhard K, Mihailov I, Alexiev B. Three cases of primary malignant melanoma of the alimentary tract. Gen Diagn Pathol 1996; 142: 63-67
18. Blecker D, Abraham S, Furth EE, Kochman ML. Melanoma in the gastrointestinal tract. Am J Gastroenterol 1999; 94: 3427-3433
19. Clemmensen OJ, Fenger C. Melanocytes in the anal canal epithelium. Histopathology 1991; 18: 237-241