Small Bowel Metastases of Malignant Melanoma: Palliative Effect of Surgical Resection

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Malignant melanoma shows an unusual predilection to metastasize to the small intestine. Three patients with malignant melanoma involving the small bowel are reported. One patient was operated on for small bowel obstruction and the other two for gastrointestinal bleeding. Two patients remained well 6 and 2 years, respectively, after surgery. One patient died of metastatic melanoma 4 years post-operation. Metastatic melanoma in the small bowel should be suspected in any patient with a previous history of malignant melanoma who develops GI symptoms or chronic blood loss. Surgical treatment was the first choice; the prognosis after surgical resection was much better than for other organ metastases or simultaneous metastases of the small bowel and other organs.

Key words: small bowel metastases – malignant melanoma – small intestine

INTRODUCTION

Metastatic spread from a tumor originating outside the peritoneal cavity rarely involves the small intestine. In malignant melanoma, however, the small bowel is involved fairly often (1–4); usually this occurs in a metastatic form, although in a few cases a primary cutaneous or ocular lesion is not found (5). Small bowel metastatic melanomas are generally clinically undetectable in the early stages. Diagnosis is therefore often delayed and is made only when complications occur (6). Three patients with malignant melanoma involving the small bowel presented in Tianjin Medical University Cancer Hospital from 1989 to 1996. The three cases of malignant melanoma small bowel metastases were operatedively resected and confirmed by histopathology. No other organ metastases were found by clinical investigation. These patients comprised 7.8% (3/38) of the malignant melanomas detected over that time period. We report these three cases and focus on this specific problem.

CASE REPORTS

CASE 1

A 27-year-old man had been in excellent health until 2 months before admission when he developed sharp, intermittent, left upper quadrant abdominal pain, associated with diarrhea and tarry stools. About 18 months previously a malignant melanoma of the nasal cavity (which was Stage II according to AJCC) had been removed. Physical examination revealed a thin, chronically ill-appearing person in moderate distress. Significant findings were limited to the abdomen, which was slightly tender in the periumbilical region. There was no guarding or rebound, bowel sounds were normoactive and no masses were palpable. Rectal examination was normal. Admission laboratory values were normal. An upper gastrointestinal (GI) series revealed markedly thickened folds involving the segmental small bowel.

Colonoscopy was performed and was normal. At laparotomy one mass was found 25 cm from the proximal end of the jejunum and measuring 4 cm in diameter. There was no other evidence of abdominal metastases and in particular the liver was normal to palpation. A segment of the jejunum including the mass was resected. The histopathological examination revealed the following. Gross examination showed a segment of the small intestine, measuring 11 cm in length and 5 cm in diameter. On the mucosal membrane of the middle part, there was a fungus-like tumor, protruding out from the mucosal membrane. The tumor mass was 5.5 x 4 x 3 cm in size, its cut surface being gray–reddish in color. Lymph node metastases were negative. The tumor was characterized by diffuse proliferation of the atypical melanocytes; the cells were round or polygonal. The cytoplasm was mainly eosinophilic and the pattern of tumor growth was diffuse and cord-like. The melanin in the cytoplasm of the tumor cells was detected by ABC immunohistochemical staining (with the Melanoma HMB45 method, Zymed, USA).

The patient made an uneventful post-operative recovery and remains well 6 years following surgery.

CASE 2

A 66-year-old man presented with melena. On examination, a mass 15 cm in diameter in the right middle abdomen was easily
Figure 1. Case 3. There are more than 10 tumors on the mucosal membrane. The largest is 10 cm in diameter.

Figure 2. The cells are mainly epithelioid or spindled in shape. The cytoplasm contains a large amount of melanin. HE, x400.

Figure 3. A large amount of melanin was detected by immunohistochemical ABC staining. x200.

There were more than 10 tumors on the mucosal membrane; upper GI endoscopy and barium, enema was normal. Four years earlier the patient had a malignant melanoma excised from the right side of the shoulder (which was Stage II according to AJCC). B type ultrasonography and computed tomography scans showed a mass 15 cm in diameter in the right side of the middle abdomen.

At laparotomy, a 10 cm diameter tumor of the mid-jejunum was found adhering to the right renal capsule. Omentum and a segment of the mid-jejunum were resected.

Gross examination showed a segment of the resected small bowel, measuring 102 cm in length and 3.5 cm in diameter. There were two mushroom-like tumor masses in the mucosal membrane, $7 \times 6 \times 2.5$ and $3.5 \times 3 \times 2$ cm, respectively, in size. On sectioning it was found that the masses were gray–whitish in color. The section series appeared rough with no lymph node metastases. Microscopically, part of the tumor cells contained a large amount of melanin. The melanocytes were spindled and round in shape, the cytoplasm was eosinophilic and basophilic in color, mitotic figures were numerous and the pattern of growth was diffuse or net.

His immediate post-operative recovery was uneventful but he died 4 years later from disseminated disease within the abdomen.

CASE 3

A 51-year-old man presented with anemia and abdominal pain for 4 months. His abdominal pain was becoming severe accompanied by vomiting for 3 days. Three years before admission a malignant melanoma had been excised from the left chest (which was Stage I according to AJCC). He was in good condition until 4 months before admission. On physical examination, one mass was palpated in the right lower quadrant, which was 6 cm in diameter. An upper GI series showed one mass pressuring the ileum and invasive of the ileum. B type ultrasonography and computed tomography scans confirmed this diagnosis. A barium contrast study was normal. Admission laboratory values were Hb 6.7 g/dl, total protein 3 g/dl, albumin 1.5 g/dl, alkaline phosphates 214 IU/l and $\gamma$-glutamyl transpeptidase 58 IU/l (normal up to 55).

At laparotomy two tumors were found in the terminal ileum 20 and 35 cm from the distal end measuring 3 and 10 cm in diameter, respectively. Small bowel intussusception caused by the smaller of the tumors, situated in the middle of the ileum, had caused the occult bleeding. Complete resection of the tumor was successfully carried out.

Gross examination showed a segment of the small bowel, measuring 10 cm in length and 3 cm in diameter. There were more than 10 tumors on the mucosal membrane; the largest was 10 cm in diameter and there were no regional lymph node metastases (Fig 1). Microscopically, the cells were mainly epithelioid and spindled in shape. The cytoplasm was foamy and the cells contained a large amount of melanin (Figs 2 and 3).

The patient is in good health 2 years following surgery.
No chemotherapy was given before or after operation in all these three cases.

DISCUSSION

The incidence of GI metastatic melanoma presenting in living patients is not a rarity. In a clinical series, the prevalence of GI metastasis in patients with melanoma was 0.9% in 1000 melanoma patients (1) (post-mortem studies). However, demonstrating a much higher incidence of intestinal involvement, the frequency of GI metastasis in patients who die with disseminated melanoma is reported to be as high as 50–60% (7). Most authors considered that the prognosis of patients whose initial site of metastatic disease was the GI tract was much better than those who developed extraintestinal metastases prior to GI tract involvement (8). This is compatible with our report that the prognosis of patients with small bowel metastases in melanoma was much better than that of other organ metastases. Symptoms of small bowel metastasis of melanoma include chronic GI blood loss (cases 1 and 3), obstruction (cases 2 and 3), abdominal pain (cases 1, 2 and 3) and anorexia, nausea and vomiting and weight loss (cases 1, 2 and 3). This underscores our belief that any patient with melanoma with GI symptoms or chronic blood loss should undergo radiological B type ultrasonography and computed tomography scan evaluation of the alimentary tract.

Most authors concur that surgical intervention can be performed with minimal morbidity and mortality in patients with melanoma and GI tract metastases. Ollila et al. (9) reported in their series that resection with curative intent was the most powerful factor for survival by multivariate analysis. The median survival time in their group was 48 months and complete resection of all metastatic disease in the small bowel yielded a 5-year survival rate of 38%. One of our three cases has survived over 5 years.

Without surgical intervention, the prognosis in patients with melanoma with visceral metastasis is poor. Amer et al. (10) reported the mean survival time of 140 patients with Stage III melanoma to be 9.7 months, while Einhorn et al. (11) suggested a shorter median survival time of 4.7 months after the appearance of visceral metastasis. Although the belief is not universal, it is the general consensus that palliative operations in patients with symptoms are indicated (8). Other authors (10, 12, 13) have reported that surgery could prolong survival times after resection of both solitary and multiple small bowel metastatic lesions. One investigator noted a mean survival time of 23 months in 10 of 24 patients with metastatic melanoma who were able to undergo resection of their GI disease. This can be compared with a mean survival time of 1.4 months in the remainder who had no operative intervention.

In summary, through our observed clinical cases, we draw the following conclusions:

1. malignant melanoma shows an unusual predilection to metastasize to the small intestine;
2. metastatic melanoma in the small bowel should be suspected in any patient with a previous history of malignant melanoma who develops GI symptoms or chronic blood loss;
3. the malignant melanoma patients with small bowel metastases have the most to benefit from an aggressive approach;
4. after surgical treatment, the prognosis of small bowel metastases in melanoma is much better than other organ metastases or simultaneous metastases of small bowel and other organs.

References