Rare disease

Solitary metachronous splenic metastasis from cutaneous melanoma

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Summary

Melanoma has been found to metastasise to the spleen, usually in cases of disseminated disease. Solitary splenic metastasis from cutaneous melanoma is very rare. Herein we report the case of a 43-year-old man who developed solitary splenic metastasis from cutaneous melanoma. The patient was operated for T_{4b} N_{1a} Mo superficial spreading melanoma of the anterior thoracic wall. He subsequently underwent left axillary lymph node dissection due to a positive sentinel lymph node. The 33 retrieved lymph nodes were negative for metastasis. The patient received adjuvant therapy with high-dose interferon α -2b. After 27 months and during the follow-up visit an increasing lactate dehydrogenase serum level was observed. Furthermore, CT of the whole body revealed a solitary hypodense tumour of the spleen 9 cm $\times$ 6 cm. Curative splenectomy was performed and the histopathological report confirmed metastatic melanoma to the spleen.

BACKGROUND

Solitary splenic metastases from cutaneous melanoma is very rare and there are only eight cases reported in the literature so far,^{1–3} one of which presented a splenic mass that was subsequently found to contain metastatic melanoma from an occult primary site.³

CASE PRESENTATION

A 43-year-old Caucasian man was operated for superficial spreading melanoma with ulceration, Clark IV, Breslow 5 and 3 mm of the upper central anterior area of the thoracic wall. No lymphadenopathy was present on physical examination. Haematological, biochemical and tumour marker (lactate dehydrogenase, LDH) profiles were within normal limits. CT scan of the whole body was negative. With the help of preoperative lymphoscintigraphy, the left axilla was identified as the main draining nodal basin. During the operation and after injection of technetium-99 (⁹⁹Tc)-labelled sulphur colloid accompanied by intraoperative use of a handheld γ probe, the sentinel lymph node was detected and harvested. Owing to the diagnosis of a sentinel lymph node of the left axilla 3 cm in diameter almost totally occupied by malignant melanoma, axillary lymph node dissection was performed. Thirty-three lymph nodes were retrieved and confirmed free of metastasis in the histopathological report. The postoperative period was uneventful and the patient was discharged on the eighth postoperative day. He was scheduled for follow-up visits every 3 months. The patient received adjuvant therapy with high-dose interferon α -2b. After 27 months and on a programmed follow-up visit, an isolated LDH measurement increase was detected. CT scan of the whole body revealed a solitary tumour of the spleen and highly suspected for malignancy. Splenectomy was performed. The histopathological report confirmed solitary intraparenchymal melanoma metastasis in the

spleen. He recovered uneventfully and was discharged on the seventh postoperative day. Family history was unremarkable.

INVESTIGATIONS

At each follow-up visit the patient underwent a physical examination, skin survey, chest radiography and measurement of LDH. On the 27th postoperative month due to isolated increase of LDH, the patient was fully investigated for suspected metastasis. On physical examination no lymphadenopathy was present and on skin survey nothing abnormal was detected. CT scan of the whole body revealed solitary tumour of the spleen 9 cm $\times$ 6 cm (figure 1). Haematological and biochemical profiles were within normal limits.

Figure 1 CT scan of a patient with an asymptomatic solitary hypodense lesion in the spleen.

DIFFERENTIAL DIAGNOSIS

Based on increased values of LDH and medical history of malignant melanoma the diagnosis of solitary splenic melanoma metastasis was highly suspicious.

TREATMENT

The patient underwent splenectomy using formal upper abdominal incision. There were no signs of metastatic spread during surgery. Histopathological report confirmed solitary splenic intraparenchymal metastatic melanoma.

OUTCOME AND FOLLOW-UP

The patient recovered uneventfully and was discharged on the seventh postoperative day. He is in follow-up and is doing well.

DISCUSSION

Although the spleen is the most vascular organ in the body, it is an infrequent site of tumour metastases.⁴ Explanations proposed for the relative scarcity of splenic metastases have included first the sharp angle made by the splenic artery which makes it difficult for tumour emboli to enter the spleen, second the absence of afferent lymphatics to bring metastatic cells to the spleen, third the rhythmic contracture of the spleen which squeezes out the tumour emboli and prevents seeding in the spleen and fourthly antitumour activity due to high concentration of lymphoid tissue in the spleen.⁵

Splenic metastasis occurs late in the course of disseminated cancer and it is usually detected at autopsy.^{6,7} The most commonly encountered metastatic tumours to the spleen as reported in the literature were breast, lung, colorectal, ovarian, gastric carcinomas and melanomas.^{6,7}

According to the American Joint Committee on Cancer staging, system metastatic melanoma is divided into M1a for skin, soft tissue or distant lymph node metastases, M1b for pulmonary sites and M1c for all visceral lesions or any distant site with raised concentrations of lactic dehydrogenase.⁸

Outside the first draining regional nodal basin (stage III) skin, soft tissue and distant lymph node metastases are the most usual sites of melanoma metastasis, comprising up to 40% of stage IV cases.^{9,10}

In patients with metastatic melanoma, the lungs are the most typical site of visceral metastases with various series reporting prevalence between 12% and 36%.⁹

Findings of autopsy studies show that melanoma metastasis to the gastrointestinal tract in 2–4% of cases.¹¹ However, around 50% of patients who die of disseminated melanoma have gastrointestinal involvement.^{12,13} The small bowel is the most usual site (75–90%) followed by colon (20–25%) and stomach (3–16%).^{14,15} Patients with gastrointestinal metastases are usually (but not always) symptomatic with anaemia (60%), abdominal pain (25–59%), bleeding (26–40%), obstruction (27%), palpable mass (12%) and weight loss (9%).¹⁵ Data for several single institution studies show augmented overall survival after total resection, with median survival increasing from 5–8 to 15–49 months after complete metastasectomy.^{14,16}

According to autopsy data splenic metastases have been found in 32–88% of patients who died of melanoma.¹⁷ In a review of 25 patients with abdominal metastases,

Gutman *et al*¹⁸ found that the spleen was involved in 15% of cases. In the review by Agha-Mohammadi and Calne,¹ melanoma accounted for only one of the reported cases of solitary splenic metastases. In the review by Wood *et al*¹⁹ of 60 patients with intra-abdominal solid organ metastases from melanoma, 11 were found to have splenic metastases. Unfortunately for the group of patients that underwent intentional curative splenectomy, 5-year survival data are not available. In a single institution review of 113 patients found to have splenic metastases secondary to melanoma, 15 patients underwent splenectomy. Seven of these 15 were thought to have a solitary metastasis. Median survival after splenectomy was 11 months for all 15 patients. However, the subgroup of seven patients with isolated metastases had a median survival of 23 months.³ Median survival of the conservatively treated group was only 4 months.

Generally, patients with visceral melanoma metastases are considered to have a very poor prognosis with a median overall survival of less than a year in a multicentre analysis.²⁰ In view of the generally dismal prognosis splenectomy is often considered futile. However, patients with discomfort or pain usually from splenomegaly are candidates for splenectomy. Kyzer and colleagues²¹ recommended splenectomy for patients with very large spleens to prevent spontaneous rupture. Spontaneous rupture of the spleen has previously been described for various other malignancies but only in four cases of splenic metastatic melanoma.^{17,22} Although these retrospective reviews cannot be used to extrapolate general conclusions for patients with metastatic melanoma, there may be a survival advantage for the surgical resection of isolated splenic metastases.

Learning points

- ▶ Isolated splenic metastasis is a rare finding in the follow-up of melanoma patients.
- ▶ Long-term survival can be achieved with splenectomy.

Competing interest None.

Patient consent Obtained.

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