

SOLITARY SPLENIC METASTASIS OF COLON CANCER: A CASE REPORT

Sh. Hashemzadeh* and M. Safari

Department of Surgery, Imam Khomeini Hospital, School of Medicine, Tabriz University of Medical Sciences, Tabriz, Iran

Abstract- Although splenic metastasis is fairly common in disseminated cancer, solitary splenic metastasis in the absence of diffuse dissemination is rare. We report a case of 44 year-old man who developed isolated splenic metastasis of colon cancer. The patient had undergone right sided hemicolectomy for colon cancer in 1988. In 2001, he underwent reoperation because of local recurrence of tumor in the anastomotic site. The patient was admitted to our hospital on Sep 2003 with abdominal pain. Chest X-ray was normal. Abdominal CT scan showed a large cystic lesion in the spleen. Splenectomy was performed for the patient. The spleen was enlarged, firm and irregular. Histological examination showed metastatic mucinous adenocarcinoma. Based on this case, we recommend that clinicians consider possibility of metastasis in cystic lesions of spleen, especially in patients with a history of a malignant disease.

Acta Medica Iranica, 42(6): 467-470; 2004

Key Words: Metastasis, Spleen, Colon cancer, Adenocarcinoma

INTRODUCTION

Spleen is the tenth most frequent site of secondary tumor and such involvement is typically indicative of diffuse dissemination. The primary solid tumors that most frequently metastasize to the spleen are those known to have a strong metastatic potential, especially carcinomas of the breast, lung, melanoma, and ovary.

Although splenic metastasis is fairly common in disseminated cancer, solitary splenic metastasis in the absence of diffuse dissemination is rare. In this paper, we report a case of isolated splenic metastasis of carcinoma of ascending colon which was successfully treated by splenectomy. We discuss here the relevance of our findings to clinical practice and also review the literature on isolated splenic metastasis.

Received: 8 Mar. 2004 , Revised: 10 May 2004, Accepted: 23 Jun. 2004

***Corresponding Author:**

Sh. Hashemzadeh, Department of Surgery, Imam Khomeini Hospital, School of Medicine, Tabriz University of Medical Sciences, Tabriz, Iran

Tel: +98 411 3340730, Fax: +98 411 6937321

E-mail: valrec2@yahoo.com

CASE REPORT

A 44 year-old man was admitted to our hospital due to aggravation of abdominal pain. His pain had been started one year before admission, was felt in the left side of his abdomen and was referred to his low back.

The patient was a case of adenocarcinoma of ascending colon that was operated upon 15 years ago in 1988. After right sided hemicolectomy the patient was referred for chemotherapy.

In 2001, he sought medical attention because of abdominal pain. Investigations showed polypoid mass in the anastomotic site. Computed tomography (CT) scan revealed thickening of descending colon. Left sided hemicolectomy and ileorectal anastomosis was performed for the patient. Histological diagnosis was adenocarcinoma and the patient was referred to oncologist for chemotherapy.

In Sep 2003, he was admitted to our hospital for abdominal mass, pain, and malaise. Physical examination revealed a left upper quadrant mass. Chest X-ray was normal, except for elevation of the left hemidiaphragm (Fig. 1). Carcinoma embryonic antigen (CEA) was 80 ng/ml (normal level is less

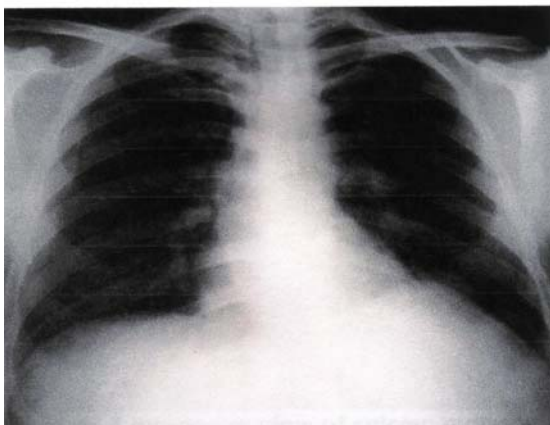


Fig. 1. Chest X-ray of the patient was normal, except for elevation of the left hemidiaphragm.

than 5 ng/ml). Other tests were normal.

Intravenous urography showed a mass effect from outer upper side on the left kidney with functional kidneys (Fig. 2).

An abdominal CT scan with contrast media enhancement showed cystic parenchymal space occupying lesion in the spleen, resulting in splenomegaly and downward displacement of the left kidney (Fig. 3).



Fig. 2. Intravenous urography showing normal functioning kidneys and inferior displacement of the left kidney.

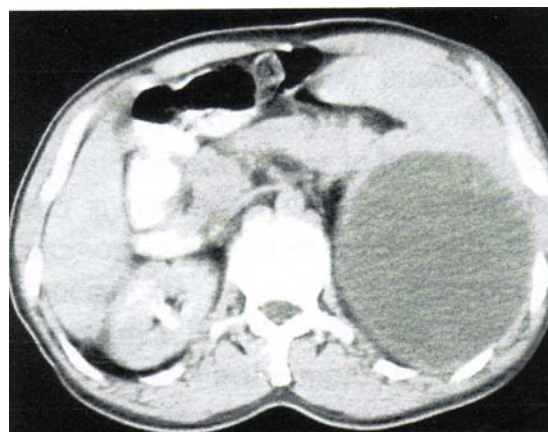


Fig. 3. Abdominal CT scan of the patient shows large space occupying lesion in the spleen, with no metastasis in the liver.

The patient underwent laparotomy. There was no sign of metastasis in the abdominal viscera except for the spleen. The spleen was enlarged, firm and irregular. Splenectomy was performed for the patient (Fig. 4).

Gross and microscopic views of spleen are shown in figures 5 and 6, respectively.

Histological examination showed microcysts composed of cells floating in the mucin and having a bland histologic appearance.

After operation the patient was discharged from hospital and referred to oncologist. Four months after discharge the patient was well.



Fig. 4. Spleen at the time of operation. It was enlarged, firm and irregular.



Fig. 5. Cross-section of the specimen showing gross appearance of spleen.

DISCUSSION

The spleen is a site of metastatic tumor in up to 7% of autopsies of cancer patients and virtually any primary malignancy may metastasize to the spleen (1). Although splenic metastasis is fairly common in disseminated cancer, solitary splenic metastasis in the absence of diffuse dissemination is rare with approximately 50 cases reported in the literature (2-6).

Solitary splenic metastasis has been identified in relation to primary tumors of lung, endometrium, ovary, cervix, stomach, colon, breast, bladder, and skin. Approximately 60% of the presented cases appear to be associated with gynecologic cancers. Colorectal carcinomas also pose a relatively high association, representing approximately 11% of the primary tumor sites. Furthermore, the majority of the primary tumors are of the histologic type of adenocarcinoma (2, 7).

Several hypotheses have attempted to explain the low incidence of splenic metastasis. It should be difficult for colorectal cancer cells to reach the spleen through the portal venous system in which the blood flow is usually from the spleen to the liver. Even if cancer cells did gain access to the spleen, formation of a metastatic nest in the spleen may be inhibited by the reticuloendothelial system or the rhythmic contractions of the spleen may squeeze out the tumor embolus to prevent it from lodging there. The absence of afferent lymphatics to the spleen,

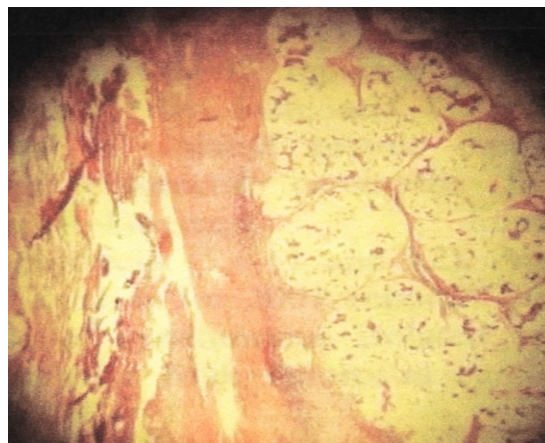


Fig.6. Low-power view of spleen; metastatic mucinous carcinoma. Tumor cells are floating in a sea of mucin.

phagocytic activity of splenic cells and humoral anticancer substances in the spleen are considered to be other reasons for the low incidence of splenic metastasis (8).

Both vascular and lymphatic routes have been proposed as the means of the transmission for splenic metastasis of colorectal carcinoma. However, the majority of authors favor the former route, because the metastasis tends to be limited within the splenic parenchyma, with the lymph nodes at the splenic hilus negative for metastasis (4, 8). Similar findings were evident in the patient described here. Okuyama *et al.* have located only 20 reported cases of isolated splenic metastasis of colorectal carcinoma in the Japanese literature and merely eight in the English-language literature (8). Thomas *et al.* in Oct 1993, Induhara *et al.* in 1997, Weathers *et al.* in Oct 1999 and Kim *et al.* in Jun 2000 reported the fourth, the fifth, the sixth, and the seventh cases of isolated splenic metastasis from colorectal carcinoma in the English-language literature, respectively (6, 9-11). Avesani *et al.* reported the first case of synchronous isolated splenic metastasis from colorectal carcinoma in Jun 2001(12).

The solitary splenic metastasis can be asymptomatic with or without raised tumor marker levels or it may presents with nonspecific symptoms, abdominal pain, and splenomegaly. The relapse interval varies inconsistently from the time of initial diagnosis to 144 months (2). In our patient this time was approximately 15 years. The treatment modality chosen in every case involves splenectomy with or

without chemotherapy and radiotherapy (2).

An increasing number of clinically asymptomatic solitary splenic lesions have been detected in recent years with the use of radiologic examinations and long-term follow-up. Okuyama *et al.* have pointed out that only six of the 28 reported patients were symptomatic at the time of diagnosis (8). Our patient had malaise and abdominal pain.

A solitary splenic mass in a patient is most suggestive of a primary splenic lesion such as lymphoma, hemangioma, hematoma, abscess or infarction. However, as outlined here, a solitary splenic lesion in a patient with a history of a malignant disease must be considered metastatic, until proven otherwise. In these patients, it is important to establish a cytohistologic diagnosis in every case of a solitary splenic lesion (2). In our patient, histologic examination showed metastatic mucinous adenocarcinoma.

REFERENCES

1. Beauchamp RD, Holzman MD, Fabian TC. In: Townsend CM, Beauchamp RD, Evers BM, Mattox KL, editors. Sabiston textbook of Surgery. 16th ed. Philadelphia: WB Saunders; 2001. p. 1151.
2. Agha-Mohammadi S, Calne RY. Solitary splenic metastasis: case report and review of the literature. *Am J Clin Oncol.* 2001 Jun; 24(3):306-310.
3. Capizzi PJ, Allen KB, Amerson JR, Skandalakis JE. Isolated splenic metastasis from rectal carcinoma. *South Med J.* 1992 Oct; 85(10):1003-1005.
4. Melis M, Scintu F, Pisano M, Capra F, Marongiu L, Mocchi P, Casula G. [Clinical relevance of unusual metastases from colorectal neoplasms]. *Minerva Chir.* 2001 Aug; 56(4):329-335.
5. Place RJ. Isolated colon cancer metastasis to the spleen. *Am Surg.* 2001 May; 67(5):454-457.
6. Thomas SM, Fitzgerald JB, Pollock RE, Evans DB. Isolated splenic metastases from colon carcinoma. *Eur J Surg Oncol.* 1993 Oct; 19(5):485-490.
7. Lee SS, Morgenstern L, Phillips EH, Hiatt JR, Margulies DR. Splenectomy for splenic metastases: a changing clinical spectrum. *Am Surg.* 2000 Sep; 66(9):837-840.
8. Okuyama T, Oya M, Ishikawa H. Isolated splenic metastasis of sigmoid colon cancer: a case report. *Jpn J Clin Oncol.* 2001 Jul; 31(7):341-345.
9. Indudhara R, Vogt D, Levin HS, Church J. Isolated splenic metastases from colon cancer. *South Med J.* 1997 Jun; 90(6):633-636.
10. Kim JC, Jeong CS, Kim HC, Yu CS, Kang GH, Lee MG. Isolated splenic metastasis from colorectal carcinoma: a case report. *J Korean Med Sci.* 2000 Jun; 15(3):355-358.
11. Weathers BK, Modesto VL, Gordon D. Isolated splenic metastasis from colorectal carcinoma: report of a case and review of the literature. *Dis Colon Rectum.* 1999 Oct; 42(10):1345-1348.
12. Avesani EC, Cioffi U, De Simone M, Botti F, Carrara A, Ferrero S. Synchronous isolated splenic metastasis from colon carcinoma. *Am J Clin Oncol.* 2001 Jun; 24(3):311-312.