

# Management of isolated synchronous splenic metastasis from obstructing colon cancer: First case report in Thai female.

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## Abstract

The authors report a case of a patient with isolated synchronous splenic metastasis from obstructing colon cancer. A 43 years old Thai female presented with abdominal distension and obstipation. CT scan of whole abdomen demonstrated a mass located at the splenic flexure and an isodense mass at the superior pole of the spleen, which was considered to be an isolated splenic metastasis. With the presumptive diagnosis of obstructing colon cancer at splenic flexure with isolated splenic metastasis. The patient underwent total colectomy with ileorectal anastomosis concomitant with splenectomy. These procedures are a successful curative option and safe for the management of this condition. Adjuvant chemotherapy following the operation to achieve long term survival and long term follow-up with monitoring of serum CEA levels, CT scan of abdomen and colonoscopy are necessary for long-term follow-up.

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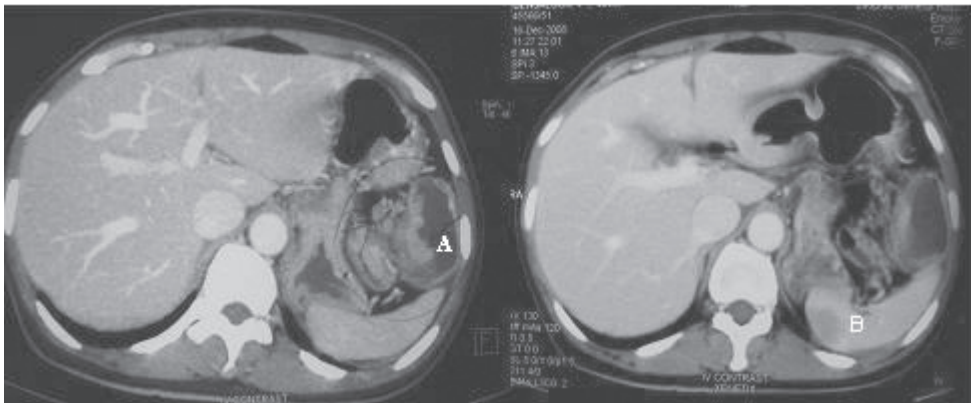
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### Case report

A 43 years old Thai female presented with abdominal distension and obstipation for 1 week. Physical examination revealed hyperactive bowel sounds and abdominal distension. No hepato-splenomegaly was detected. Films of acute abdomen series showed the dilatation of the small bowel and large bowel through the level of splenic flexure and no pulmonary metastasis was detected on the chest radiograph. A computed tomography scan (CT scan) of the whole abdomen demonstrated an irregular polyploid

tumor mass located at the splenic flexure with an isodense mass size of 2.6 x 1.6 cm at the superior pole of the spleen. No evidence of hepatic and peritoneal metastasis was demonstrated.

Laboratory tests were performed and showed the serum carcinoembryonic antigen (CEA) level of 9.7 ng/ml (normal range < 4 ng/ml). With a presumptive diagnosis of obstructing colon cancer at the splenic flexure with isolated splenic metastasis, the patient underwent an operation.



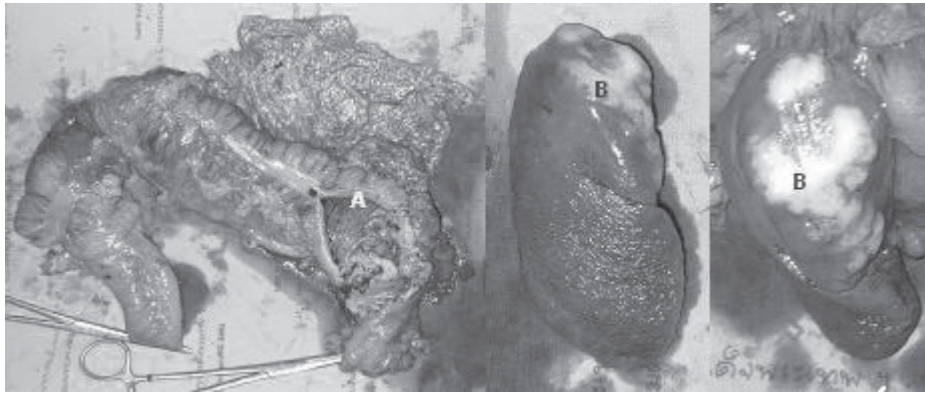
**Figure 1: CT scan of abdomen showing tumor at splenic flexure (A) and solid mass at superior pole of spleen (B)**

On explorative laparotomy, the large bowel was distended and the cecum diameter was about 8 cm. A 4.5 cm. tumor mass was located at the splenic flexure causing nearly complete luminal obstruction. The splenic size was 7.5?4.5?3.2 cm and weighted 50 grams. There was palpable mass at superior pole of the

spleen measured 4 x 2.7 x 2.3 cm but inferior pole of the spleen was intact. No hepatic metastasis was detected by intraoperative ultrasonography (IOUS). Neither intraperitoneal seeding of the tumor, lymph node metastasis nor ascites were found. A total colectomy with side-to-end ileorectal anastomosis was performed

by hand sewn technique concomitant with splenectomy as a curative procedure that is in

trend. Operative time was 200 minutes and the estimated blood loss was about 150 ml.



**Figure 2: Demonstration of the tumor at the splenic flexure(A) and the upper pole of the spleen(B)**

Pathologic study of the resected specimen showed moderately differentiated adenocarcinoma invasion through the muscular layers into pericolic tissue, and metastasis was found in 5 of the 16 pericolic lymph nodes. Histologically, the splenic lesion was a metastasized adenocarcinoma from colon cancer (T3 N2 M1).

The postoperative course was uneventful. Adjuvant chemotherapy (FOLFOX 4 regimen) was started on the fourteenth postoperative day. After the seventh month of the follow-up period neither recurrent tumors nor other systemic metastasis were detected.

### **Discussion**

The incidence of isolated synchronous splenic metastasis from colorectal cancer is low.

Only 13 cases have been reported in English literature, indicating a sign of extensive disease.<sup>1-3</sup> This can be rationalized by the following theories:

1. Colorectal cancer cells could not reach the spleen through the usual portal venous system from the spleen to the liver,
2. The sharp angulation of the splenic artery with the celiac axis and the rhythmic contractions of the sinusoidal splenic architecture limits the metastasis.<sup>2</sup>
3. The spleen is the second largest organ of the reticuloendothelial system, and immune substances such as “splenic factor” appear to inhibit tumor cell proliferation and destroy tumor cells<sup>4,5</sup> However, splenic metastasis could be explained by retrograde spread of

colorectal cancer cells from the inferior mesenteric vein to the splenic vein<sup>6</sup>. Since most patients are asymptomatic. Diagnosis of isolated splenic metastasis can be made preoperatively by imaging studies and raising serum CEA levels.<sup>1,2,5</sup>

Long-term survival after splenectomy in the patients with isolated metachronous splenic metastasis from colon carcinoma varies from 0.5 to 7 years<sup>5</sup>, but survival in patients with isolated synchronous splenic metastasis is still unknown. Many of literatures suggest splenectomy followed by adjuvant chemotherapy were improvement of long-term survival for patients.<sup>3-6</sup>

In this case we performed a total colectomy with ileorectal anastomosis concomitant with splenectomy, which is a safe and curative surgical procedure. The patient receiving adjuvant chemotherapy (FOLFOX 4 regimen) in postoperative period. Long-term follow-up with monitoring of serum CEA levels, CT scan of the abdomen, and colonoscopy are necessary as is true for other colorectal cancer patients, for surveillance of local tumor recurrent and systemic metastasis.

### Conclusion

Isolated synchronous splenic metastasis in colorectal cancer with obstruction is rare. No long-term follow up data and long-term survival of the patient has been reported. Total colec-

tomy concomitant with splenectomy as a safe curative procedure for the management of this condition and the patient must receive adjuvant chemotherapy following the operation to achieve long-term survival.

### Reference

1. Gencosmanoglu R, Aker F, Kir G, Tozun N. Isolated metachronous splenic metastasis from synchronous colon cancer. *World J Surg Oncol* 2006;4:42-7.
2. Bigot P, Goodman C, Hamy A, Teyssedou C, Arnaud JP. Isolated splenic metastasis from colorectal cancer: report of a case. *J Gastrointest Surg* 2008;12:981-2.
3. Okuyama T, Oya M, Ishikawa H. Isolated splenic metastasis of sigmoid colon cancer: a case report. *Jpn J Clin Oncol* 2001;31:341-5.
4. Place RJ. Isolated colon cancer metastasis to the spleen. *Am Surg* 2001;67:454-7.
5. Pisanu A, Ravarino A, Nieddu R, Uccheddu A. Synchronous isolated splenic metastasis from colon carcinoma and concomitant splenic abscess: a case report and review of the literature. *World J Gastroenterol* 2007;13:5516-20.
6. 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;24:311-2.