References

- Isaacson PG, Spencer J. Malignant lymphoma of mucosa-associated lymphoid tissue. Histopathology 1987;11:445-62.
- Zucca E, Roggero E, Pileri S. B-cell lymphoma of MALT type: a review with special emphasis on diagnostic and management problems of low-grade gastric tumours. Br J Haematol 1998; 100:3-14.
- Isaacson PG. Lymphomas of mucosa-associated lymphoid tissue (MALT). Histopathology 1990; 16:617-9.
- Zinzani PL, Magagnoli M, Galieni P, et al. Nongastrointestinal low-grade mucosa-associated lymphoid tissue lymphoma: analysis of 75 patients. J Clin Oncol 1999; 17:1254.
- Ferrer A, López-Guillermo A, Bosch F, et al. Non-gastric mucosa-associated lymphoid tissue (MALT) lymphomas: analysis of 14 patients. Med Clin (Barc) 1999; 112:577-80.
- Hernández JA, Ribera JM, Oriol A, et al. Primary gastrointestinal lymphomas: response to eradicative therapy and prognostic factors in 52 patients. Med Clin (Barc) 1998; 110:45-50.
 Thieblemont C, Bastion Y, Berger F, et al. Mucosa-
- Thieblemont C, Bastion Y, Berger F, et al. Mucosaassociated lymphoid tissue gastrointestinal and nongastrointestinal lymphoma behavior: analysis of 108 patients. J Clin Oncol 1997; 15:1624-30.

Spontaneous rupture of spleen during peripheral blood stem cell mobilization in a patient with breast cancer

The administration of a combination of chemotherapy and cytokines (G-CSF or GM-GSF) is associated with a significantly increased efficacy of stem cell mobilization compared with either modality alone. In this paper we describe spontaneous splenic rupture during peripheral blood stem cell (PBSC) mobilization in a patient with breast cancer.

Sir,

We describe a case of spontaneous splenic rupture during peripheral blood stem cell (PBSC) mobilization in a 38-year old woman with resectable high-risk mammary carcinoma, treated accordingly with high-dose sequential (HDS) adjuvant chemotherapy.¹ After administration of high-dose cyclophosphamide (CTX) 7 g/m², the patient received recombinant human (rh) granulocyte colony-stimulating factor (G-CSF) 5 mg/kg/day subcutaneously beginning 1 day after the administration of CTX until the day of leukapheresis.

Physical examination prior to the course of CTX + G-CSF did not demonstrate palpable splenomegaly. Serology demonstrated no previous exposure to hepatitis A, B and C, Epstein Barr virus, Herpes virus types 1 and 2, cytomegalovirus, HIV-1, or toxoplasma.

A right subclavian vein double lumen apheresis catheter (Quinton Instrument Corp.), was placed on day-1, and the patient underwent apheresis on day 12. The white blood count on day 12 was 39.6 $\times 10^{\circ}/L$, the platelet count was $110 \times 10^{\circ}/L$.

Twenty-four hours following leukapheresis the patient experienced left-sided abdominal pain. An



Figure 1. Abdominal CT scan revelaed an enlarged ruptured spleen.

abdominal computed tomography scan indicated subcapsular hemorrhage (Figure 1). She had an emergency splenectomy. The spleen was $15 \times 12 \times 6.5$ cm in size and weighed 480 g (Figure 2) Macroscopic examination showed a ragged-edged capsular tear 3.8 cm in length near the hilum. Histology showed massive extra-medullary myelopoiesis in the red pulp without erytroblasts or megakaryocytes. The most common adverse effects attributed to G-CSF include bone pain, headache, musculoskeletal pain, and rash² but splenic rupture has also been described as a rare complication following administration of G-CSF in two allogeneic donors of PBSC.^{3,4}

The incidence of splenomegaly in normal individuals treated with G-CSF is currently unknown; this has only been described for individuals with neutropenia on chronic therapy.⁵ It is interesting to note that the



Figure 2. Ruptured spleen: note hemorrhage and fragmentation.

splenomegaly and massive extramedullary myelopoiesis in the red pulp after a few doses of growth factor administered was similar in these patients with spontaneous splenic rupture following administration of granulocyte colony-stimulating factor.

We believe that this report describes the first case of spontaneous splenic rupture during PBSC mobilization with CTX plus G-CSF. In view of our data we suggest special attention in clinical evaluation of the spleen size in patients receiving G-CSF.⁶

> Vincenzo Pitini, Antonio Ciccolo*, Carmela Arrigo, Giuseppa Aloi, Carmelo Micali,° Francesco La Torre Departments of Oncology,

*Surgery and "Blood Center, University of Messina, Italy

Key words

Peripheral blood stem cell (PBSC), cyclophosphamide (CTX), recombinant human (rh) G-CSF.

Correspondence

Vincenzo Pitini, M.D., Oncologia Medica (Pad. H), Policlinico Universitario, via Consolare Valeria, 98100 Messina, Italy. Phone: international +39-090-2213241 - Fax: international +39-090-2213231 E-mail: cmicali@www.unime.it

References

- 1. Gianni AM, Siena S, Bregni M, et al. Efficacy, toxicity, and applicability of high-dose sequential chemotherapy as adjuvant treatment in operable breast cancer with 10 or more involved axillary nodes: five-year results. J Clin Oncol 1997;15:2312-21.
- Frampton JE, Lee CR, Faulds D. Filgrastim. A review of its pharmacological properties and therapeutic efficacy in neutropenia. Drugs 1994; 48:731-60.
 Becker PS, Wagle TM, Matous S, et al. Spontaneous
- Becker PS, Wagle TM, Matous S, et al. Spontaneous splenic rupture following administration of granulocyte colony-stimulating factor (G-CSF): occurrence in an allogeneic donor of peripheral blood stem cells. Biol Blood Marrow Transplant 1997; 3:45-9.
- Falzetti F, Aversa F, Minelli O, Tabilio A. Spontaneous rupture of spleen during peripheral blood stem-cell mobilisation in a healthy donor. Lancet 1999; 353: 555.
- Dale DC, Bonilla MA, Davis MW, et al. A randomized controlled phase III trial of recombinant human granulocyte colony-stimulating factor (filgrastim) for treatment of severe chronic neutropenia. Blood 1993; 81: 2496-502.
- Siena S. Towards the integration of hematopoietic stem cells into therapy of breast cancer? Haematologica 1999; 84:865-7.

ERRATA CORRIGE

The article by Rombos et al., entitled Chelation therapy in patients with thalassemia using the orally active iron chelator deferiprone (L1), which appeared in the February 2000 issue of Haematologica (85:115-117), was erroneously published in the print journal in an unedited version due to a software malfunctioning. The final edited version has now been posted in the online journal (http://www.haematologica.it/abstr/rombos8502.html).

The article «Cyclophosphamide/cyclosporin-A treatment of multicentric Castleman's disease with Kaposi's sarcoma published in Haematologica 2000; 85:216-7 was erroneously attributed to Maria Tiziana Bertero, Massimo De Maestri, Federico Caligaris-Cappio; the right name of the authors must be Maria Tiziana Bertero, Monica De Maestri, Federico Caligaris-Cappio. Our apologizes to the authors.

In the article by Rasero et al. «Comparison of two different time interval protocols for central venous catheter dressing in bone marrow transplant patients: results of a randomized, multicenter study», published in Haematologica 2000; 85:275-278, under the heading "Results" the paragraph starting with "Classification of patients according to cutaneous toxicity is..." must be replaced as following: "Classification of patients according to cutaneous toxicity is shown in Table 4. Grade 0 toxicity was recorded in 86% and 87% of redressings in the 5-day group and 10-day group, respectively; the difference between the two groups of patients with indwelling CVC was not significant. In contrast, there was a greater proportion of patients showing grade II-III toxicity in the 2-day non-tunneled group than in the 5-day group (5.3% vs 2.5%, $p \le 0.002$); accordingly, the percentage of patients with grade 0 toxicity was significantly higher in the 2-day group (75%) than in the 5-day group (66%; p<0.005)."