Brief Communication

Received: November 9, 1992

Accepted: August 3, 1993

Acta Haematol 1993;90:102-103

A Case of Multiple Myeloma with Nuclear Hypersegmentation after MP/VAD/VCAP-IFN Therapies with a Good Prognosis

M.	Masayuki	Nara ^a
K.	Kenshi	Suzuki ^a
Y.	Yasuyuki	Inoue ^a
H.	Hidetoshi	Enomoto ^a
T.	Tsunehiro	Saito ^b
S.	Shigenori	Fujioka ^b

Departments of Hematology, ^aJapanese Red Cross Medical Center, and ^bMitsui Memorial Hospital, Tokyo, Japan

Masayuki Nara, Department of Hematology, Japanese Red Cross Medical Center, 4-1-22 Hiroo, Shibuya-ku, Tokyo 150 (Japan)

There have been several reports dealing with multiple myeloma with hypersegmented nuclei [1-6]. Some of them described the prognoses as very poor. Here, we report a case of multiple myeloma with hypersegmented nuclei with a good prognosis.

A 71-year-old male was admitted to Mitsui Memorial Hospital on February 12, 1986, because of thrombocytopenia. Blood pressure was 96/50 mm Hg. White blood cell count was 1,600/mm³, hemoglobin level 11.3 g/dl and platelet count 3.0×10⁴/mm³. Blood chemistry revealed total protein 6.0 g/dl, albumin 4.1 g/dl, BUN 34 mg/dl, creatinine 3.6 mg/dl, IgG 572 mg/dl, IgA 13 mg/dl and IgM 35 mg/dl. Urinalysis showed Bence-Jones protein (5.6 g/day). Bone scintigraphy (^{99m}Tc, 925 MBq) revealed hot spots at the right 7th and left 5th ribs. Bone marrow aspiration revealed plasmacytosis (33% of nucleated cell count) with nuclear hypersegmentation (fig. 1a, b). Many endoplasmic reticula were apparent through electron microscopy (fig. 1c). In addition, cytoplasmic fibrillar structures were found around nuclei at high magnification. The patient was diagnosed as having multiple myeloma (Bence-Jones λ type).

He was treated by melphalan 8 mg/day for 15 days and prednisolone 60 mg/day for 15 days (MP therapy). After administration, his symptoms diminished. In November, 1986, he was given melphalan and prednisolone again and achieved partial remission.

Following bone marrow aspiration showing plasmacytosis (58% of nucleated cell count), he was admitted to Mitsui Memorial Hospital on August 25, 1989. He was treated by vincristine sulfate 0.4 mg/day for 4 days, Adriamycin 10 mg/day for 4 days and dexamethasone 40 mg/day for 4 days (VAD therapy). He was then discharged of his own will on September 28. However, on the next day, he was admitted to the Japanese Red Cross Medical Center because of general fatigue.

Blood chemistry revealed albumin 3.4 g/dl, BUN 60 mg/dl, creatinine 2.8 mg/dl, IgG 853 mg/dl, IgA 34 mg/dl and IgM 18.7 mg/dl. Urinalysis showed Bence-Jones protein (392 mg/day). Chest

X-ray films revealed a patchy shadow with a definite cavity. Examination of the sputum revealed *Pseudomonas aeruginosa*.

After his respiratory findings improved, he was given vincristine sulfate 1 mg/day and Adriamycin 20 mg/day for 1 day, cyclophosphamide 100 mg/day and prednisolone 10 mg/day for 4 days (VCAP therapy). He was then given interferon alpha 3 million IU/day for 20 days. After he received VCAP-IFN therapy (in November, 1989), his plasma cell counts were 7% of the nucleated cell counts in his bone marrow. He received MP therapy again 1 month later (melphalan 2 mg/day and prednisolone 10 mg/day for 60 days). His plasma cell counts were 3% of the nucleated cell counts in his bone marrow in January, 1990, and he was discharged on March 12 (urinalysis revealed a little protein, 46 mg/day, on discharge).

After discharge, he was treated by melphalan 2 mg/day and prednisolone 10 mg/day for 30 days. The plasma cell counts were 1% of the nucleated cell count in November, 1991. All findings became normal. Hemoglobin level was 13.2 g/dl. Blood chemistry analysis revealed IgG 1,500 mg/dl, IgA 172 mg/dl and IgM 89 mg/dl. Urinalysis showed no abnormalities. He achieved complete remission. He presently does not receive any medical attention.

The prognosis of multiple myeloma with nuclear hypersegmentation is usually considered to be adverse [2-5]. Islam et al. [3] reported a patient who had an aggressive course. The patient was a 65-year-old female. Her serological studies revealed IgM-Kappa type multiple myeloma. She did not respond well to conventional chemotherapy and died within 6 months of diagnosis [3]. Kurabayashi et al. [2, 4] also reported a patient who ran an aggressive course. The patient was a 46-year-old male. His total serum protein was 7.5 g/dl with an IgA-Kappa monoclonal component. Although a partial response to chemotherapy consisting of melphalan, vincristine, cyclophosphamide, procarbazine, doxorubicin, and prednisolone, was obtained, he died of renal failure 6 months after diagnosis [2]. In their case they did not find cytoplasmic fibrils, microfibrils and microtubules in the multinucleated myeloma cells. They pointed out that myeloma cells in their case were immature [2]. In our case, there were a lot of endoplasmic reticula in the plasma cells, and cytoplasmic fibrillar structures were found around the nuclei. Hence, the plasma cells in our case were also immature. It is unclear whether there is a relationship between a certain type of multiple myeloma with nuclear hypersegmentation and prognosis. However, our case responded well to VAD and VCAP-IFN therapies. Our patient achieved complete remission 5 years after diagnosis.

4 Φ

Fig. 1. a, b Light microscopic figure of a hypersegmented plasma cell found in bone marrow. HE. × 135. c Electron microscopic figure of a plasma cell with a lot of endoplasmic reticula × 3,050.

References

- Beltran G, Stucky WJ: Nuclear tabulation and cytoplasmic fibrils in leukemic plasma cells. *Am J Clin Pathol* 1972;58:159-164. Kurabayashi H, Miyawaki S, Murakami H, Nemoto K, Sawamura T, Kubota K, Naruse T, Tsuchiya J: Ultrastructure of multinucleated giant cells: Report of one case. *Am J Hematol* 1989; 31:284-285.
- Islam A, Noyes S, Henderson ES: A case of aggressive multiple myeloma with convoluted and multilobated plasma cell nuclei and no visible nucleoli. *Br J Haematol* 1990;76:306-307.

Kurabayashi H, Kubota K, Murakami H, Miyawaki S, Naruse T, Tsuchiya J: Multinucleated giant myeloma cells. *Br J Haematol* 1991; 79:135-136.

Djaldetti M: Nuclear hypersegmentation in myeloma cells. *Br J Haematol* 1991;77:442. Djaldetti

M, Lewinski UH: Nuclear hypersegmentation in the myeloma cells of a patient with multiple myeloma. *Scand J Haematol* 1983;31:144-148.