Ann Hematol (2008) 87:681–682
DOI 10.1007/s00277-008-0473-0

LETTER TO THE EDITOR

Histiocytic sarcoma localised in the thyroid—a case report

Filip Y. F. L. De Vos · Martin N. Gerding · Jan W. Arends · Jurgen J. Wegman

Received: 5 November 2007 / Accepted: 26 February 2008 / Published online: 3 April 2008

Dear Editor,

"Histiocytic sarcoma" is a rare haematological neoplasm with immunohistochemical and morphological diagnostic criteria per exclusionem. In this case report, our patient illustrates that this rare tumour with its unique location and diagnostic morphologic criteria is sensitive to a combination of anthracycline-based chemotherapy and radiotherapy, resulting in complete response for 2 years.

A 64-year-old Caucasian woman presented with an asymptomatic, gradually enlarging neck mass at the Outpatient Department of Internal Medicine. Laboratory results showed subclinical hypothyroidism. Thyroid scintigraphy revealed a cold nodule in the left lower thyroid lobe. Results of aspiration cytology were compatible with an infected cyst. Based on the presence of a goitre, subclinical hypothyroidism and auto-antithyroid peroxidase antibodies >600 kU/L, a diagnosis of Hashimoto's thyroiditis was suspected and treated with levothyroxin. Five months later she developed neck pain. Pre-operative tru-cut biopsy showed a cell-rich tumour proliferation, possibly histiocytic. Further histological biopsies by open surgery incision showed diffuse proliferation of cells made up of large, bizarre, lobulated, vesicular nuclei with one or more conspicuous nucleoli and ample eosinophilic cytoplasm. Between these cells scattered plasma cells and occasional lymphocytes were seen. No thyroid tissue was present. Immunohistochemical staining revealed strong cytoplasmic expression for CD68 (clones KP-1 and PGM-1) (Fig. 1), lysozym and α1-antitrypsin, whereas lymphoid and myeloid markers (CD43, myeloperoxidase) were all negative as well as keratins, thyreoglobulin, calcitonin and S100. Melan-A, thyrosinase and HMB45 (melanocytic markers) were also negative, excluding the differential diagnosis of metastatic malignant melanoma. Molecular analysis of T cell receptor (TcR) with polymerase chain reaction revealed an unusual, but consistent pattern of TcR rearrangement, not supporting a malignant process of lymphoid origin. On morphological grounds, diagnosis of histiocytic sarcoma was favoured over anaplastic lymphoma and anaplastic thyroid carcinoma as the cells lacked expression of CD30, keratins, thyreoglobulin and calcitonin.

Computed tomography (CT) and 18F-fluorodeoxyglucose-positron emission tomography (PET) scanning showed a mass in the left thyroid lobe without metastases. A bone marrow biopsy showed normal histology. Chemotherapy (cyclophosphamide 750 mg/m^2, doxorubicin 50 mg/m^2 and vincristine 2 mg on day 1 with prednisolon 60 mg/m^2 on day 1 through 5) was administered intravenously every 3 weeks for three cycles. This resulted in partial response. Apart from alopecia, no other side effects were noticed. After chemotherapy, radiotherapy in a dose of 40 Gy was given to the thyroid and left side of the neck. This resulted in a complete remission on staging with PET scan and CT scan after completion of radiotherapy, which persists for 2 years.

Histiocytic sarcoma is an extremely rare, malignant proliferation of cells showing morphologic and immunophenotypic features similar to those of histiocytes [1].

F. Y. F. L. De Vos · M. N. Gerding · J. J. Wegman
Department of Internal Medicine, Deventer Hospital, Deventer, The Netherlands

J. W. Arends
Department of Clinical Pathology, Deventer Hospital, Deventer, The Netherlands

F. Y. F. L. De Vos (✉)
Department of Internal Oncology,
Erasmus Medical Centre–Daniel den Hoed Hospital,
P.O. Box 5201, 3008 AE Rotterdam, The Netherlands
e-mail: f.devos@erasmusmc.nl

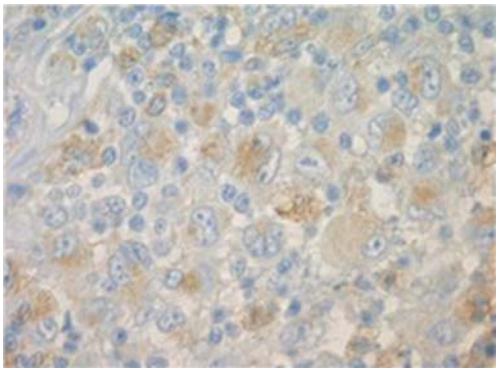

Fig. 1 CD68 staining. Enlargement ×200

Originally, the diagnosis of histiocytic lymphoma has been made often, but further research revealed that most of such cases represented tumours of lymphoid origin. Median age of diagnosis is 46 years with a male predominance. First presentation occurs in lymph nodes (in one third of all cases), in the skin (1/3) and in extranodal sites, mostly intestinal tract (1/3) with advanced disease stage [1]. Arising from phagocytes and related accessory cells with presentation of antigens to lymphocytes, pathological interpretation of lineage distinction can be difficult due to poor differentiation of tumour cells [1–4]. Diagnosis is based on histologic and immunohistochemical criteria, ruling out epithelial, melanocytic, myeloid and lymphoid origin. In our case, morphology showed histiocytic tumour proliferation with immunophenotypic positivity for CD68, lysozym and α1-antitrypsin without B-cell, T-cell, melanocytic and myeloid markers. Generally, the response is poor due to the aggressive nature with high proliferative rate and extranodal spread [1]. Primary treatment consists of radical surgery with wide surgical margins, frequently combined with elective radiotherapy. With no evidence-based data, several chemotherapeutic schemes have been added to surgery and radiotherapy, primarily for local control of the disease. Recently, allogeneic haematopoietic stem cell transplantation and thalidomide showed some response [5]. The sequence of therapy modalities still needs to be clarified. We preferred a neoadjuvant combination of cyclophosphamide, doxorubicin and vincristine and radiotherapy, resulting in complete response for 2 years.

Acknowledgment We thank Dr. D. de Jong of the Department of Pathology, The Netherlands Cancer Institute, Amsterdam, the Netherlands for assistance in the immunohistochemical analysis.

References

1. World Health Organization Classification of Tumours (2001) Pathology and genetics of tumours of haematopoietic and lymphoid tissue. International Agency for Research on Cancer (IARC), Lyon, pp 274–289
2. Alexiev BA, Sailey CJ, McClure SA, Ord RA, Zhao XF, Papadimitriou JC (2007) Primary histiocytic sarcoma arising in the head and neck with predominant spindle cell component. Diagn Pathol 2:7–14
3. Vos JA, Abbondanzo SL, Barekman CL, Andriko JW, Miettinen M, Aguilera NS (2005) Histiocytic sarcoma: a study of five cases including the histiocyte marker CD163. Mod Pathol 18:693–704
4. Pileri SA, Grogan TM, Harris NL, Banks P, Campo E, Chan JK, Favera RD, Delsol G, De Wolf-Peeters C, Falini B, Gascoyne RD, Gaulard P, Gatter KC, Isaacson PG, Jaffe ES, Kluin P, Knowles DM, Mason DY, Mori S, Müller-Hermelink HK, Piris MA, Ralfkiaer E, Stein H, Su IJ, Warnke RA, Weiss LM (2002) Tumours of histiocytes and accessory dendritic cells: an immunohistochemical approach to classification from the International Lymphoma Study Group based on 61 cases. Histopathology 41: 1–29
5. Abidi MH, Tove I, Ibrahim RB, Maria D, Peres E (2007) Thalidomide for the treatment of histiocytic sarcoma after haematopoietic stem cell transplant. Am J Hematol 82:932–933