An Adrenal Myelolipoma with Infiltration of Chronic Lymphocytic Leukemia

Z Pan, S Repertinger

Citation

Z Pan, S Repertinger. *An Adrenal Myelolipoma with Infiltration of Chronic Lymphocytic Leukemia*. The Internet Journal of Pathology. 2007 Volume 7 Number 1.

Abstract

A 72 year-old Caucasian gentleman with a history of chronic lymphocytic leukemia (CLL) died of septic shock due to perforated cholecystitis and diverticulitis. An adrenal myelolipoma identified incidentally at autopsy was found to contain multiple foci of chronic lymphocytic leukemia. To our knowledge, this is the first report in the medical literature of CLL involving an adrenal myelolipoma.

CASE REPORT

An autopsy was performed on a 72-year-old white male with multiple medical problems, which included congestive heart failure, hypertension and chronic obstructive airway disease. Chronic lymphocytic leukemia (CLL) was diagnosed nine years prior to death. One year ago, the patient developed relapse of CLL and a gingival lesion; flow cytometric analysis of the bone marrow and immunohistochemical staining of the gingival lesion revealed neoplastic lymphocytes with reactions to CD5, CD19, CD20, CD23 and CD79a.

Several weeks prior to death, the patient developed neutropenia, recurrent fever as high as 104 F, hypotension, and right upper quadrant abdominal pain. Sepsis was suspected and cholelithiasis was diagnosed radiographically. Eventually the patient succumbed to his illness and an autopsy was performed. Important autopsy findings included cholelithiasis with acute cholecystitis and perforation and diverticulitis of the sigmoid colon with perforation and acute serositis. The bone marrow and lymph nodes at multiple sites were diffusely involved with leukemic infiltrates. In addition, a well-circumscribed, solid nodule was found within the right adrenal gland, which measured 1.8 cm in greatest dimension. The nodule showed a variegated yellow and dark red cut surface with small admixed gray-white foci (Figure 1).

Histologically, the nodule consisted of a well-circumscribed, unencapsulated (Figure 2A) tumor composed of mature adipose tissue with intermixed hematopoietic elements (Figure 2B). Multiple lymphoid aggregates composed of monotonous small lymphocytes were scattered throughout the bone marrow elements (Figures 2A and 2C). Immunohistochemical stains demonstrated that these lymphocytes were positive for CD5, CD20, CD23 and CD79a (Figures 3A, 3B and 3C), an immunoprofile identical to that obtained on previous flow cytometric assay of the bone marrow and immunostains of the gingival biopsy (Figure 2D). These histological and immunohistochemical findings support an involvement of adrenal myelolipoma by CLL.

Figure 1

Figure 1: grossly, the adrenal nodule shows a variegated yellow and dark red cut surface with small admixed gray-white foci.

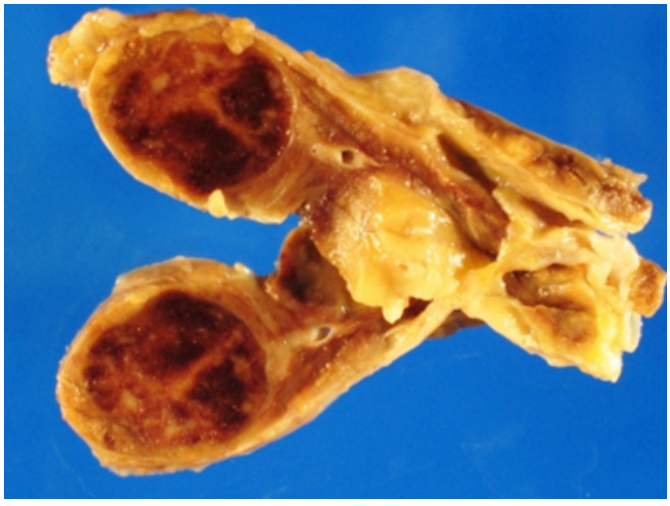


Figure 2

Figure 2: microscopically, (A-C) the tumor is composed of mature adipose tissue with intermixed hematopoietic elements. Multiple lymphoid aggregates composed of monotonous small lymphocytes are present in the tumor; (D), a gingival biopsy one year ago reveal extensive infiltration of small neoplastic lymphocytes.

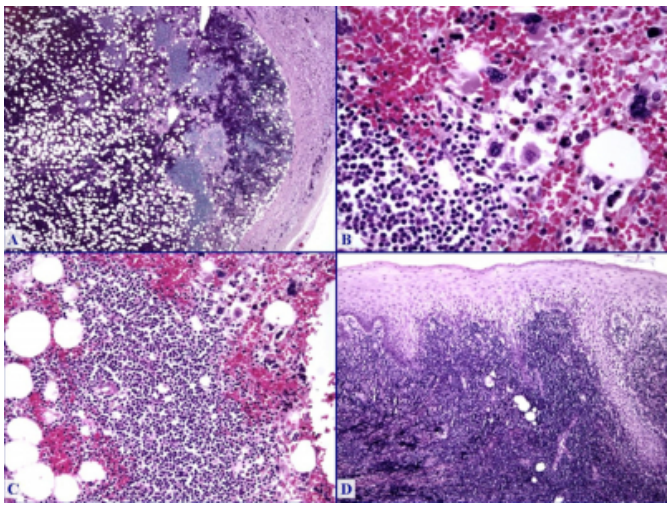
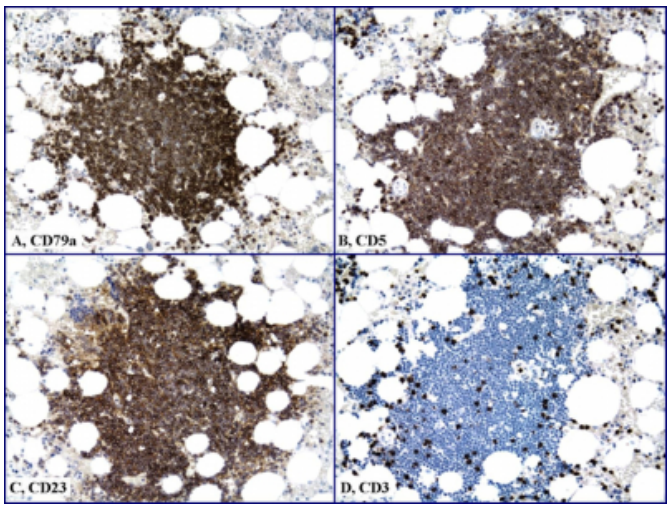


Figure 3

Figure 3: immunohistochemical stains demonstrated that the lymphocytes are positive for CD5, CD79a and CD23, and CD3 immunostain only highlights scattered reactive T lymphocytes.



DISCUSSION

Myelolipoma is a rare benign neoplasm, usually discovered incidentally at autopsy or on imaging studies performed for other clinical indications. Myelolipoma most commonly occurs in the 5th to 7th decades of life with no sex predilection, and the incidence varies from 0.08-0.4% at autopsy [1,2,3,4,5,6,7]. Most myelolipomas occur within the adrenal gland, although they are rarely encountered at extra-adrenal locations, such as the presacral and pararenal retroperitoneum, mediastinum, liver, and muscular fascia. The pathogenesis of myelolipoma remains undetermined [1, 2], although several hypotheses have been proposed, including retention of embryonic rests, extramedullary hematopoiesis and metaplastic origin [2]. Myelolipomas are usually unilateral, small and asymptomatic. Microscopically, adrenal myelolipoma is composed of mature adipocytes with interspersed hematopoietic cells at variable ratios [1, 2, 3].

To our knowledge, this is the first report in the medical literature of myelolipoma with CLL involvement. In fact, solid tumor infiltration by CLL has rarely been reported. The tumor in this case was incidental at autopsy with leukemic involvement confirmed by immunohistochemical staining.

CORRESPONDENCE TO

Susan Repertinger, M.D. Department of Pathology Creighton University Medical Center Omaha, NE 68131, USA TEL: (402) 449-4630 FAX: (402) 449-5252 E-mail: Susanrepertinger@creighton.edu

References

1. Repassy DL, Csata S, Sterlik G, Ivanyi A. Giant adrenal myelolipoma. Pathol Oncol Res 2001;7(1):72-3
2. Meaglia JP, Schmidt JD: Natural history of an adrenal myelolipoma 1992 J Urol 147:1089.
3. Sharma MC, Kashyap S, Sharma R, Chumber S, Sood R, Chahal R Symptomatic adrenal myelolipoma. Clinicopathological analysis of 7 cases and brief review of literature. Urol Int 1997; 59: 119-24.
4. Sanders R, Bissada N, Curry N, Gordon B. Clinical spectrum of adrenal myelolipoma: Analysis of 8 tumors in 7 patients. J Urol 1995; 153: 1791-3.
5. Dieckmann KP, Hamm B, Pichartz H, Jonas D, Baucer HW.Adrenal myelolipoma : clinical radiologic and histologic features. Urology 1987; 29: 1-8.
6. Bhansali Aa, Dash RJa, Singh SKb, Behra Ac, Singh Pd, Radotra BDe. Adrenal Myelolipoma: Profile of Six Patients with a Brief Review of Literature. International Journal of Endocrinology and Metabolism. Vol1,No1 March2003.
7. Goetz, SP, TH Niemann, RA Robinson, and MB. Cohen. Hematopoietic elements associated with adrenal glands: a study of the spectrum of change in nine cases. Arch Pathol Lab Med 1994;118:895-896.

Author Information

Zenggang Pan, M.D., Ph.D.
Department of Pathology, Creighton University Medical Center

Susan Repertinger, M.D.
Department of Pathology, Creighton University Medical Center