Ann Hematol (2008) 87:859–861
DOI 10.1007/s00277-008-0492-x

LETTER TO THE EDITOR

Primary adrenal lymphoma: a case series study

C. S. O. Schreiber · J. R. Sakon · F. P. C. Simião · M. P. Tomarchio · M. Huayllas · L. C. M. M. Pereira · L. C. Stella · A. C. Santomauro Jr · S. S. S. Bueno · F. F. Fraige

Received: 5 November 2007 / Accepted: 22 March 2008 / Published online: 6 May 2008
© Springer-Verlag 2008

Dear Editor,

Non-Hodgkin's lymphoma affects the adrenal gland, usually in the advanced stage of the disease. In 30% to 50% of patients with primary adrenal lymphoma (PAL), there are signs compatible with subclinical adrenal insufficiency only detected by laboratory tests [2, 3].

Autopsy series show that 25% of patients present gland involvement, in some degree, during disease course [1]. PAL is a rare form of primary adrenal neoplasia, and the English-language medical literature has reported 70 cases of PAL; the Chinese has only 30 cases [3]. We had three cases, and they will be presented below.

Case 1: An 80-year-old man, reporting abdominal pain, nausea, and loss of weight for 5 months. Physical examination: pale, hyperpigmentation of the skin, and cardiac arrhythmia. Abdominal magnetic resonance imaging: oval-shaped bilateral mass of the adrenal gland, swollen on its left side (5.5 cm). Laboratory tests: Table 1. The patient started glucocorticoid and mineralocorticoid therapy and went through CHOP chemotherapy regimen (cyclophosphamide, Adriamycin or hydroxydoxorubicin, vincristine, and prednisone) associated to rituximab. The clinical outcome was the patient's death due to respiratory failure 2 months after the diagnosis.

Case 2: A 62-year-old man presenting a history of asthenia, anorexia, loss of weight, postural hypotension for 6 months, associated with severe abdominal pain. Physical examination: blood pressure 110×80 mmHg (seating) and 80×70 mmHg (standing); ungual hyperpigmentation. Insulin resistance test with no cortisol enhancement; abdominal tomography: bilateral mass lesions of the adrenal gland, swollen on its right side (10 cm), with renal capsule invasion. Laboratory tests: Table 1. He started chemotherapy but died 6 months after due to pulmonary thromboembolism.

Case 3: A 73-year-old woman, with diabetes, reporting hypoglycemia and decreased consciousness, using chlorpropramide. After having discontinued medication, she presented hyponatremia and hypoglycemia over 7 days (drug half-life). Physical examination showed disorientation and obnubilation. Laboratory exams disclosed bicytopenia (Table 1). Under suspicion of hematological neoplasia, she had an abdominal tomography that disclosed bilateral diffuse adrenal hyperplasia. She started chemotherapy associated with corticotherapy, making the full endocrine investigation impossible. The glycemic level and the natremia were normalized. Currently, the patient is under chemotherapy regimen (CHOP and rituximab) with a 14-month survival.

Literature indicates that adrenal insufficiency is the most common clinical manifestation of PAL cases [5, 6] identified in the first two reported cases. Regarding case 3, unfortunately, there has not been enough time to make a more detailed investigation.

Case 1 presented elevated serum levels of adrenocorticotropic hormone (ACTH), upholding the presence of skin hyperpigmentation. All the studied cases presented low levels of dehydroepiandrosterones (DHEAs), not confirming adrenal carcinoma.

The radiological investigation of the three cases pointed out bilateral and heterogeneous images, which are the most typical forms described in literature. The fine-needle aspira-

C. S. O. Schreiber (✉) · J. R. Sakon · F. P. C. Simião · M. P. Tomarchio · M. Huayllas · L. C. M. M. Pereira · L. C. Stella · A. C. Santomauro Jr · S. S. S. Bueno · F. F. Fraige
Endocrinology Department, Beneficência Portuguesa Hospital, Sao Paulo, Brazil
e-mail: cristina22@bol.com.br

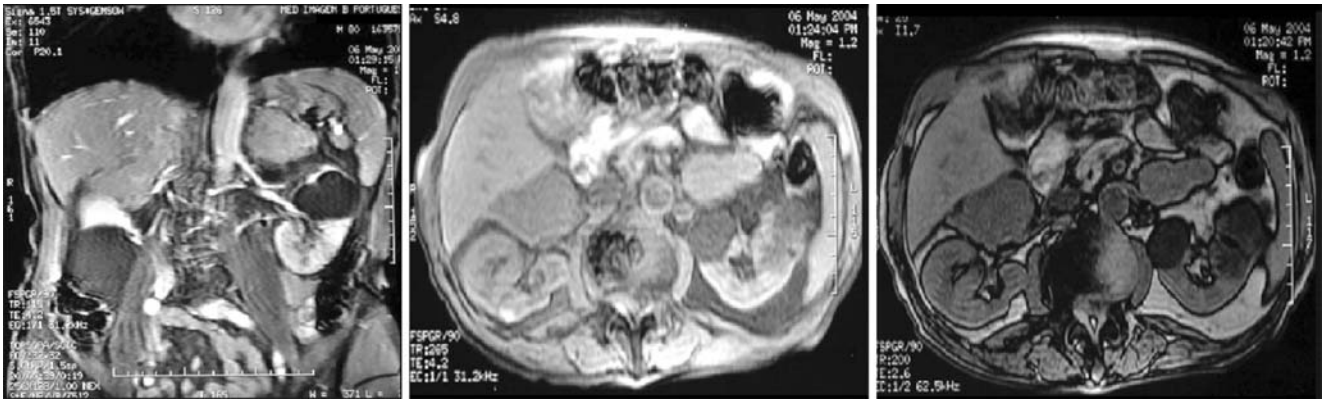

Fig. 1 Case 1

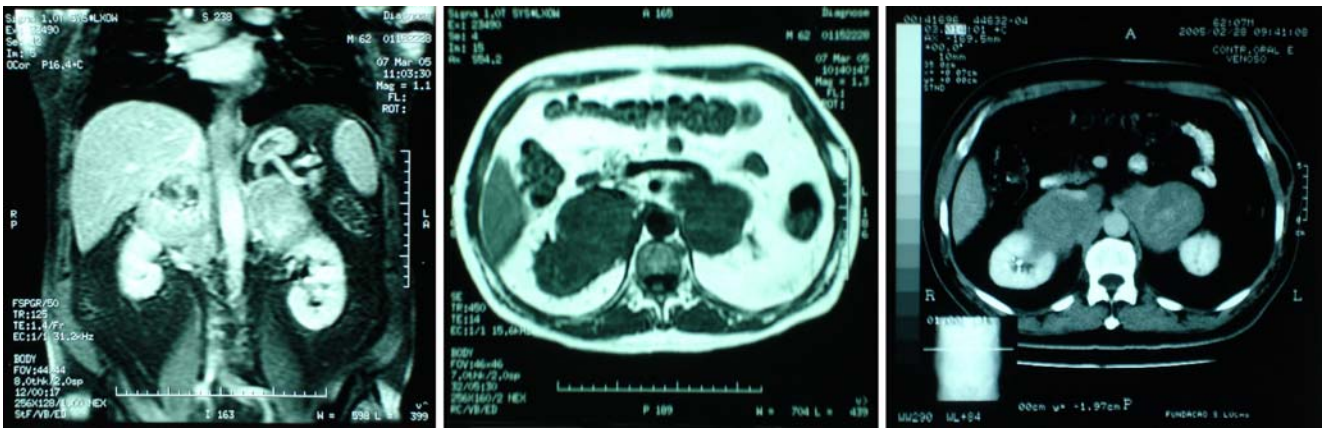

Fig. 2 Case 2

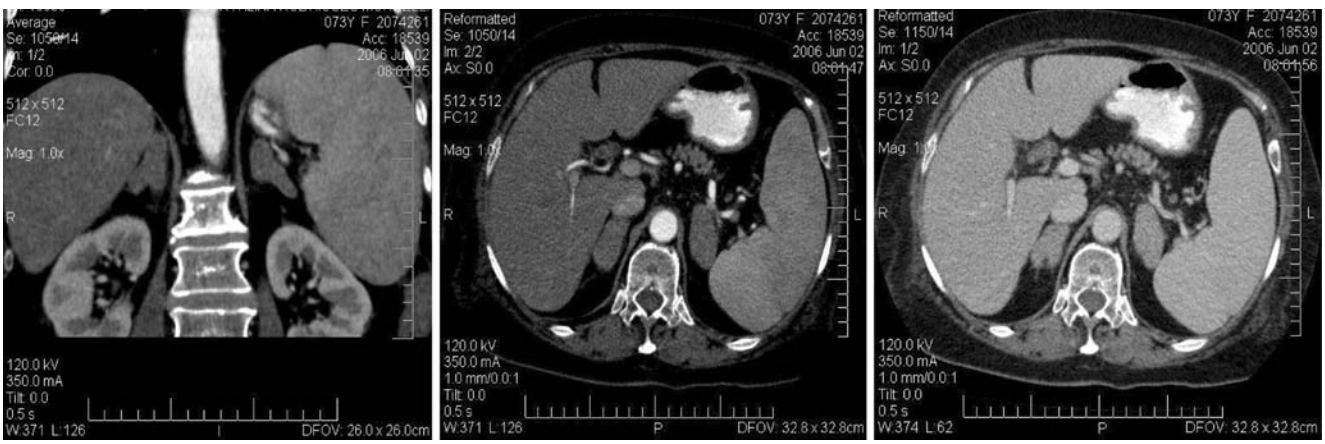

Fig. 3 Case 3

Table 1 Laboratory examinations

Tests	Case 1	Case 2	Case 3
Hemoglobin (g/dL)	11.3	11.8	9.0
WBC (10^9/L) (eosinophils%; lymphocytes%)	5800 (3;23)	3800 (6;22)	4700 (0;25)
Platelet count (10^9/L)	ne	100	89
LDH (180–460 U/L)	358	881	462
Na (mEq/L)	122	128	125
K (mEq/L)	5.6	4.5	4.4
ACTH (10–60 pg/mL)	482	89.3	37
Cortisol (mcg/dL)	<3	6.5	10.6
DHEA-S (80–560 mcg/dL)	<15	<15	<15
Plasma renin activity (PRA; 3.5–65.6 pg/dL)	715		
Renin (0.5–24 ng/mL/h)		0.7	
Renin (3–16 pg/ml)			6.1
Aldosterone (1.0–16.0 ng/dL)	<1.0	5.6	8.0
Urinary metanephrines/catecholamines	Normal	Normal	Normal
Anatomopathological examination of tissue obtained by CT-guided biopsy	Lymphoproliferative disease	Lymphoproliferative disease	Lymphoproliferative disease
Immunohistochemitry	Large B-cell lymphoma (positives CD45 and CD20)	Large B-cell lymphoma (positives CD20, CD45, and vimentin)	Large B-cell lymphoma (positives CD20 and CD45)

ne Non-existing

tion punction is the gold standard diagnosis method [5, 6] and attested large B-cell lymphoma in these three cases.

During the treatment, the three patients were submitted to CHOP regimen associated to rituximab. Nonetheless, we noted a poor outcome in the first two cases.

Singh et al. [4] reported that only half of the patients respond to chemotherapy with an average survival of 4 months. Among our patients, only the third patient presents 14 months survival, maybe by precocious diagnosis before clinical adrenal insufficiency.

Literature indicates some poor prognostic indicators, such as advanced age, initial presentation as primary adrenal insufficiency, tumor size, lactate dehydrogenase (LDH) level, and involvement of other organs [3]. The third case had lower LDH level than others.

Concerning the increased incidence of adrenal incidentalomas, it is necessary to emphasize that early diagnosis of PAL, before the adrenal insufficiency appears, contributes to decrease patient's morbimortality. Moreover, because it is a rare condition, with a fast fatal outcome, more cases must be reported to address an effective treatment for primary adrenal lymphoma.

References

1. Salvatore JR, Ross RS (1999) Primary bilateral adrenal lymphoma. Leuk Lymphoma 34(1–2):111–117
2. Askarian F, Xu D (2006) Adrenal enlargement and insufficiency: a common presentation of intravascular large B-cell lymphoma. Am J Hem 81:411–413
3. Zhang LJ et al (2006) Imaging of primary adrenal lymphoma: case report and literature review. Acta Radiol 9:993–997
4. Singh D et al (2004) Adrenal involvement in non-Hodgkin's lymphoma: four cases and review of literature. Leuk Lymphoma 45 (4):789–794 April
5. Shea TC, Spark R, Kane B, Lange RF (1985) Non-Hodgkin's lymphoma limited to the adrenal gland with adrenal insufficiency. Am J Med 78:711–714
6. Hsu CW, Ho CL, Shew WHH, Harn HJ, Chao TY (1999) Adrenal insufficiency caused by primary agressive non-Hodgkin's lymphoma of bilateral adrenal glands: report of a case and literature review. Ann Hematol 78:151–154