Adrenal lipoadenoma

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Abstract

Presence of mature adipose tissue, lymphoid infiltration, and bone marrow cells is a rare but well-known occurrence in the adrenal cortex and in both hyperplastic and neoplastic adrenocortical lesions. We present a case and review of literature of adrenal cortical adenoma with considerable component of mature adipose tissue in a 51-year-old woman. Bone marrow elements were not identified in totally examined specimen. Only few lesions composed of sheets of adrenocortical cells and extensive areas of fatty tissue have been previously reported and must be differentiated from adrenal myelolipoma because they represent very uncommon but distinct pathological entity which does not have a generally accepted name so far.

Keywords: Adrenal, lipoadenoma, lipomatous metaplasia, adipose change, fatty change

Introduction

Presence of mature adipose tissue, lymphoid infiltration, and bone marrow cells is a rare but well-known occurrence in the adrenal cortex and in both hyperplastic and neoplastic adrenocortical lesions. The present report describes a case of adrenocortical adenoma with a large component of fatty tissue lacking hematopoietic component.

Case report

A 51-year-old woman presented with features of Cushing's syndrome and high serum cortisol level. Abdominal computerized tomography demonstrated enlargement of the left adrenal gland. The patient underwent left adrenalectomy, with following resolution of Cushing's syndrome.

The specimen consisted of a well circumscribed mass surrounded by a thin capsule measured 4 cm in its largest diameter and weighed 18 g. On cut section the lesion was soft and yellow. An intact adrenal gland was not seen. Entire specimen was taken for microscopical examination. The hematoxylin-eosin stained sections revealed the tumor mass to be composed of sheets and nests of adrenocortical cells and extensive areas of mature adipose tissue comprising about 50% of the lesion (Figures 1 and 2). The medulla was not identified. Adrenal cortical tissue did not show nuclear atypia, mitotic figures, necrosis, fibrosis, vascular or capsular invasion. Ki67 proliferation rate is 1%. So, no parameters of malignancy were detected and tumor was diagnosed to be benign. No hematopoietic tissue was found in any of the sections.

Discussion

Lipomatous lesions in adrenal glands are uncommon and

comprise 4.8% of primary adrenal tumors noted in the 30 years period [1]. The lipomatous tumors of the adrenals are often of a benign nature, such as myelolipomas, lipomas, angiomyolipomas, or mature teratomas, and are rarely malignant, such as liposarcomas. A case of myxoid adrenocortical carcinoma with extensive lipomatous metaplasia has been described as well [2].

Myelolipoma is the most common adipose tumor of the adrenal gland. It is characterized by presence of a variable amount of fat and active bone marrow elements. It is often incidentally discovered in association with congenital adrenal hyperplasia and in patients with Cushing's syndrome. Hematopoietic elements appear to be essential for the diagnosis of myelolipoma. The complete absence of any bone marrow components and the presence of mature fat in totally submitted for histological examination specimen justifies the designation of this lesion as an adrenal lipoadenoma, i.e., adrenal cortical adenoma with extensive lipomatous metaplasia. Although a histogenetic relationship between the latter and myelolipoma cannot be excluded, the lesion nevertheless seems to constitute a separate morphologic entity. The lipomatous tissue may represent a degenerative phenomenon within an adrenocortical adenoma or may be an additional neoplastic component of the tumor [3].

Lipomas are extremely rare in adrenal gland. Such a tumor can be excluded here since, by definition, lipoma represents a well circumscribed mass of the fat tissue. In our case, however, the adipose tissue was dispersed throughout the adrenal cortical tumor, thus lacking the characteristics of lipoma.

The differential diagnosis includes also the extremely rare tumors for adrenals, such as teratoma, composed of mature tissues arising from more than one germinal layer with large

Figure 1. Large areas of mature fat tissue within the adrenal cortical adenoma (H&E, original magnification x40).

Figure 2. Large areas of mature fat tissue within the adrenal cortical adenoma (H&E, original magnification x80).

fatty component; angiomyolipoma, consisting of epithelioid or spindle cells separated by thick walled blood vessels with foci of adipocytes; liposarcoma containing lipoblasts.

It should be noted that in the literature there are different names of the present rare entity: lipomatous changes in adrenocortical adenoma [3], adrenal cortical adenoma with extensive fat cell metaplasia [4], lipomatous metaplasia in adrenocortical hyperplasia [5], adrenocortical lipoadenoma [6].

Conclusion

A significant component of mature adipose tissue dispersed in the adrenocortical adenoma without any evidence of bone marrow elements undoubtedly represents the distinct pathological entity which is very rare and does not have a generally accepted name hitherto.

Competing interests

The authors declare that they have no competing interest.

Authors' contributions

Authors' contributions	LU	IM	DB	FB
Research concept and design	✓	✓	✓	✓
Collection and/or assembly of data	✓	--	--	--
Data analysis and interpretation	✓	--	--	--
Writing the article	✓	✓	--	--
Critical revision of the article	✓	✓	✓	✓
Final approval of article	✓	✓	✓	✓
Statistical analysis	--	--	--	--

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