Case report
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Adrenal myelolipoma diagnosed by fine needle aspiration biopsy

Myelolipoma is a rare benign tumor composed of mature adipose tissue and haematopoietic cells. Although it is most commonly found in the adrenal gland, extraadrenal myelolipomas have been found in various sites. We described a case of adrenal myelolipoma in a 72-year-old man with nodular hyperplasia of the prostate gland. During the preoperative examination ultrasound and CT-scanning showed a 9x8x8 cm mass in the right adrenal gland. Fine needle aspiration (FNA) under CT-guidance was obtained and cytological examination gave the diagnosis of myelolipoma. FNA has become a diagnostic method accepted worldwide and is reliable and simple for the diagnosis of myelolipoma.

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INTRODUCTION

Myelolipoma is a rare benign tumor, which is characterized by mature adipose tissue and haematopoietic cells. It is most commonly found in the adrenal gland but it can also be seen in various extraadrenal sites, including mediastinum, liver, stomach, lungs, pelvis, spleen, retroperitoneum, presacral region and mesentery. Most cases are found incidentally, either at autopsy or through CT scanning done for other reasons. We present a case of an adrenal myelolipoma diagnosed by computed tomography (CT)-guided fine needle aspiration (FNA) in a patient with nodular hyperplasia of prostate gland.

CASE REPORT

Our patient was a 72-year-old man who referred to a urologist because of urinary obstructive symptoms. The clinical history and rectal examination revealed enlargement of the prostate gland. Ultrasound of the abdomen showed a 9x8x8 cm mass in the right adrenal gland. Computed tomography confirmed the finding and revealed a second mass in the left adrenal gland, measured 4x4 cm. The differential diagnosis included metastatic adenocarcinoma of the prostate and primary adrenal tumor. Prostate-specific antigen (PSA) and all routine blood studies were normal, except from elevated erythrosedimentation rate, which was 100 mm. Surgical excision of the prostate gland was performed and histologic sections showed nodular hyperplasia and chronic prostatitis. A fine needle aspiration of the right adrenal mass was obtained under CT-guidance and direct Thin-Prep smears were made. A cell block preparation from the material of the aspiration was performed, too.

CYTOLOGY

Microscopically, the aspiration was cellular and revealed mature adipose tissue fragments and numerous trilineage haematopoietic cells against a bloody background. The material gave the appearance of red bone-marrow specimens. The bone marrow elements were normal in various stages of maturation (Figure 1,2).

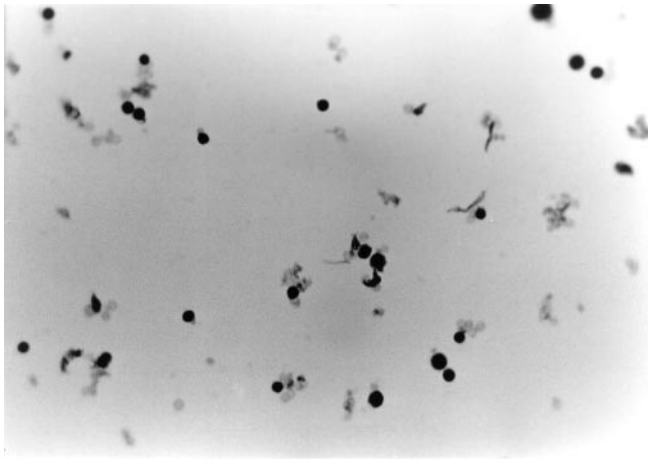

Figure 1a. Lymphoid cells; no fat is evident. Thin-prep smear (hematoxylin and eosin X 250)

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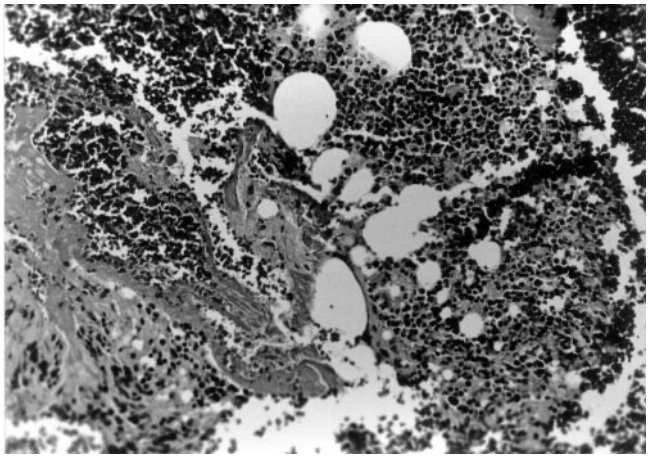

Figure 1b. The lesion consists of mature adipose tissue and immature haematopoietic cells (cell block, hematoxylin and eosin X 100)

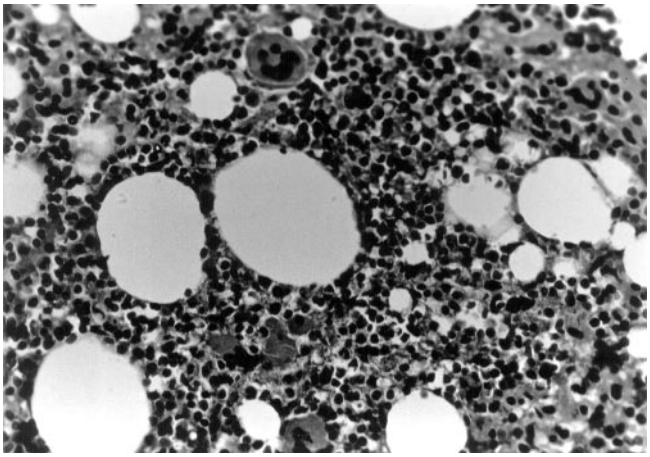

Figure 1c. Megakaryocytes, myeloid elements, fat tissue and rare lymphoid cell aggregates. The megakaryocytes are the most helpful cells in diagnosis (cell block, hematoxylin and eosin X 400)

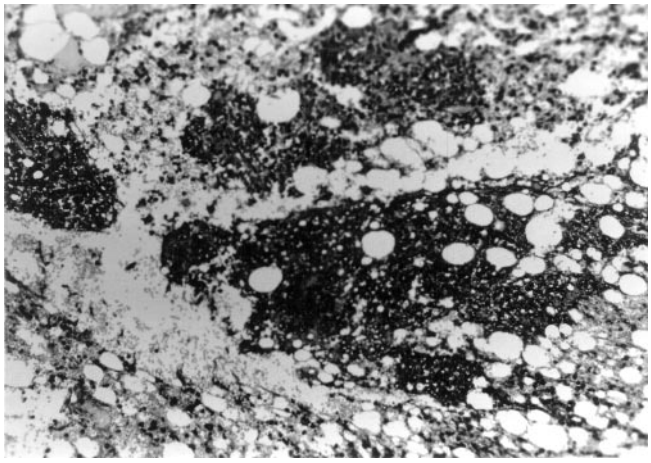

Figure 2a. Myelolipoma. Mesenchymal elements react with vimentin althouth it is not specific stain for the dignosis vimentin immunohistochemical stain X 100)

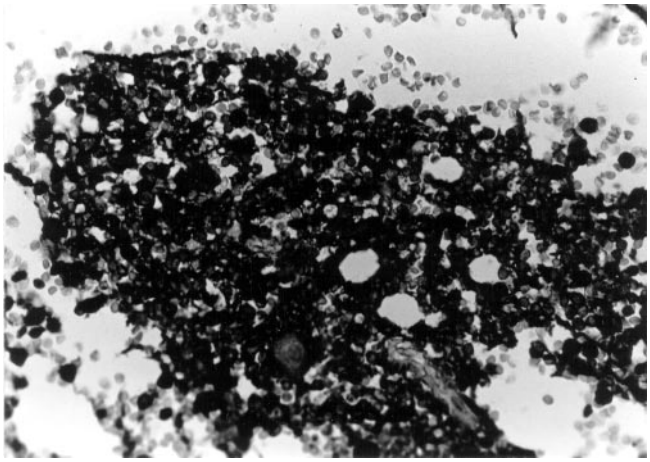

Figure 2b. Myelolipoma. Lymphoid cells are positive for LCA immunohistochemical stain. LCA is not specific stain for the diagnosis but is useful in identifying immature lymphoid cells (leucocyte common antigen X 250)

DISCUSSION

Myelolipoma is an uncommon benign tumor with a frequency of 0.08 to 0.4 per cent. The tumor was first described by Gierhe in 1905 and named by Oberling in 1929 (1,2). The age range at presentation is usually between 41 and 81 years (mean, 61) with a female/male ratio of 2:1. It is usually solitary. Most of them are asymptomatic and therefore discovered incidentally , either at autopsy or through CT scanning done for other reasons. Only occasionally will the lesions attain a size large enough to become clinically apparent, with symptoms resulting from compression of adjacent organs. The tumor is hormonally inactive but an occasional association with endocrine and hormonal disturbances has been reported in patients with long-term steroid use or Cushing's syndrome. Foci of myelolipomatous change have been observed in cortical adenomas, hyperplasias and normal glands. Despite the fact that the most common site is in adrenal gland extraadrenal myelolipomas have been reported. The most common extraadrenal site is in the presacral region; other sites include mediastinum, liver, stomach, lungs, spleen, retroperitoneum and mesentery.

Pathologically, the tumor originates in the adrenal cortex, is well circumscribed , nonecapsulated with a pseudo-capsule of compressed zona gromerulosa and fasciculata. The color varies from bright yellow to brown depending on the amount of lipoid and haematopoietic cells and on the presence of fat necrosis or hemorrhage. It is composed of mature adipose tissue with scattered islands of haematopoietic cells at different stages of maturation. The cause of this entity is in doubt. Theories are including choristomal embryonic fault, extramedullary haematopoiesis, embolism of marrow cells and cortical metaplasia. Most experts currently suggest that undifferentiated mesenhymal cells within the adrenal cortex are stimulated to differentiated into the myeloid lipoid lines by of unknown stimulus (3).

Myelolipoma must be distinguished from extramedullary

haematopoiesis (EMH) which is commonly associated with anemia, myeloproliferative disorders, infiltrative disease of bone marrow, hepatospleenomegaly and skeletal abnormalities. EMH is also single or multiple, poorly circumscribed and it often contains small amount of adipose tissue (4).

Our patient had: 1) normal peripheral blood findings 2) the masses were well circumscribed and 3) the CT showed that the masses were within the adrenal gland, a site uncommon for EMH. Lymphoma should also be considered in the differential diagnosis if lymphoid infiltrates are prominent (4).

In conclusion, FNA offers a reliable and simple method for the diagnosis of myelolipoma. The diagnosis should be taken into account whenever trilineage haematopoietic cells and mature adipose cells are encountered on FNA, with appropriate clinical and radiological findings.

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