Abstract

Background: Adrenal myelolipoma is a rare benign tumor formed by hematopoietic tissue and mature adipose tissue. Usually is insidious and found occasionally on image exams, therefore is also called incidentaloma. Image studies and anatomopathological exam are important to define the diagnosis of adrenal myelolipoma. This study’s objective was to report the case of this rare adrenal tumor and its main diagnostic means.

Case: It was report a case about a 72-year-old patient, whose initial symptom was diffuse abdominal pain, nausea and vomiting, diagnosed with adrenal myelolipoma after image studies even in the absence of laboratory abnormalities, and submitted at a private hospital at Belém-PA.

Conclusions: The adrenal myelolipoma, due its usual asymptomatic characteristics or its no-specifics symptoms, requires a meticulous analysis concerning both diagnosis and treatment. Thus, our case report corroborates the importance of the image studies in front of an obscure and difficult diagnosis, especially the computed tomography, and anatomopathological evaluation, since they are essential to the best decision making and consequently a better prognosis of the patient.

Introduction

Constituting a benign tumor of origin in the adrenal gland cortex, adrenal myelolipoma is composed of a variable mixture of mature adipose tissue and elements of hematopoietic tissue [1], and is
Adrenal myelolipoma has a wide spectrum of clinical manifestations, ranging from the absence of symptoms to chronic abdominal pain, and may be associated with dysfunction of the adrenal hormones, such as Cushing’s syndrome, Conn’s syndrome, pheochromocytoma and virilization [5]. We report a case of myelolipoma that occurred in the city of Belém-PA, in a patient with diffuse abdominal pain, and we will discuss the importance of the use of imaging methods and anatomopathological evaluation to define the diagnosis.

**Case Report**

A 72-year-old male patient sought care due to diffuse abdominal pain, accompanied by nausea and vo-

---

Figure 1: Expansive mass in left adrenal seen by abdominal CT (A/B) and pelvic-abdominal MRI (C/D).
miting. Ultrasound examination showed no alterations. Computed tomography was then performed (Figure 1), which showed an expansive image of lobulated contours and partially defined limits, measuring 17.1 x 11.8 x 8.8 cm in the largest diameters, located in the topography of the left adrenal gland, which previously compressed and displaced the pancreas and inferred the left kidney. Three nodular images adjacent to the lesion were also highlighted, measuring 3.0 cm, 4.5 cm and 1.5 cm. MRI of the upper abdomen and pelvis revealed a lesion of fatty lineage in the left adrenal gland, measuring about 10 cm, compatible with myelolipoma (Figure 1). Laboratory tests showed no change.

The patient was subsequently submitted to retroperitoneal lymphadenectomy and left adrenalectomy, with removal of left paraortic mass. The masses were collected and taken for macro and microscopic examination. Patient is asymptomatic and in post-surgical recovery.

Macroscopic exam
Three specified containers were received. The masses measured 12 x 7 x 4 cm (left adrenal mass), 7 x 6 x 3 cm (left paraortic mass) and two retroperitoneal nodes measuring approximately 1 cm each. All the masses presented a yellowish and partially encapsulated external surface, with an area that could correspond to the insertion of another tumoral lobe. In the cuts, the tumors had a yellowish color with red-wine areas and soft consistency.

Microscopic exam
The histopathological analysis of all tumors showed mature adipose cells without atypia, as well as hematopoietic elements (Figure 2). In the peripheries of the tumors called ‘adrenal mass’ and left ‘paraortic’ mass there was compressed residual adrenal cortex. In all samples there were outbreaks of old and recent hemorrhages.

Figure 2: Optical microscopy of adrenal tissue: mature adipose cells. Infiltrates of myeloid, erythroid and megakaryocytic lineage.

Discussion
Myelolipomas are most commonly found between the fifth and seventh decades of life [6], as is the case of the patient reported. They are usually detected by imaging methods or by autopsies performed for reasons unrelated to adrenal diseases, and therefore are also called “incidentalomas” [7]. Of all the incidentalomas, 70% correspond to non-functioning adenomas, 5 to 16% to functioning adenomas, 6% to pheochromocytomas, 5% to adrenocortical carcinomas, 2% to metastases, and the rest to other types of lesions, myelolipomas included in this category [8].

Myelolipomas are usually asymptomatic tumors, unilateral and small, smaller than 4 cm. The largest tumor ever recorded was 31 x 24.5 x 11.5 cm and weighed 6 kg [9]. In cases of tumors smaller than 4 cm, conservative management is the choice, and surgery is indicated for cases larger than this value. All myelolipomas larger than 4 cm are indicative of adrenalectomy [10]. Those whose sizes reach values greater than 8 cm are called giant adrenal myelolipomas, and usually become symptomatic due to compressive effects, intrallesional hemorrhages.
and infarcts. Cases of giant adrenal myelolipoma are extremely rare, with few cases reported in the literature [11].

Although benign, the incidental finding of myelolipoma requires immediate management, since the accelerated and massive growth of such neoplasia can result in symptoms such as flank pain and abdominal pain, discomfort due to rupture and hemorrhage. Thus, it is essential that adequate attention be paid to adrenal incidentalomas, with adequate management aimed at preventing such consequences [12].

Due to the predominantly asymptomatic or non-symptomatic nature of myelolipomas, with non-localizative symptoms, imaging tests are extremely important for evaluation of the condition. This is because tumor recognition by imaging is relatively easy, since myelolipomas contain gross fat and are characteristically identified based on the presence of macroscopic fat. In addition, other diseases can rarely mimic it, such as adrenal cortical adenoma with lipomatous metaplasia, adrenal lipoma or adrenal teratoma [13].

Thus, USG, CT and MRI are effective in the diagnosis of adrenal myelolipomas in more than 90% of the cases, with CT being the most sensitive diagnostic modality, corroborating with data from the case reported above, since changes in adrenal gland of the patient were only revealed by CT [8]. In addition, imaging methods are useful tools in the differentiation between malignant and benign lesions of the adrenal glands, since they provide subsidies that help in the exclusion of aggressive characteristics suggestive of malignancy or identify predictive aspects of benignity [14].

However, the diagnostic elucidation is performed by means of the histopathological examination of the lesion, because although the imaging tests have high sensitivity for the detection and characterization of the tumor, the assumption of the histological type considering only the image can lead to the diagnostic error and thus institution of inadequate conduct [15]. In addition, histopathological analysis is useful for studying and establishing differences between hormonally active and non-active myelolipomas. Su et al. [1] analyzed two distinct cases of myelolipoma in which histopathology revealed the presence of mature adipose tissue and hematopoietic elements in hormonally active adrenal tissues, indicating that extrinsic compression may contribute to anatomical and functional abnormalities of the adrenal cortex. According to the authors, the excessive hormonal stimulation by the abnormal adrenal cortex is involved with the transformation of adrenal tissue into myeloid cells and liposubstitution.

The presence of poorly defined symptoms or the finding of adrenal incidentalomas, even with a rare incidence, such as adrenal myelolipoma, require detailed evaluation in order to establish an adequate diagnosis and differentiation between malignant and benign causes. To do this, some methods are sensitive and essential for the correct follow-up of the patient. Among them, imaging exams, especially CT, and histopathological examination constitute important tools, which will guide individualized treatment for each patient, according to the lesion and its histological type.

Acknowledgments
We are grateful for the attention and availability of the patient described in this case report.

Fundings
The authors declare having had no financial support.

Conflict of interest disclosures
The authors declare that there are no conflicts of interest in this case report.
References