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Images of Interest / Imagens de Interesse

Adrenal Hemangioma

Hemangioma da Supra-Renal

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Abstract

An asymptomatic 75-year-old male was referred to Oncologic Urology consultation due to a right adrenal incidentaloma, suspicious for pheochromocytoma. Plasmatic and urinary metanephrines as well as urinary catecholamines values were normal. There was no increased uptake of ^{123}I-mIBG on scintigraphy. CT showed an encapsulated, predominantly cystic lesion of the right adrenal gland, measuring 96x87 mm on axial images that had peripheral foci of contrast enhancement. Due to its dimensions and diagnostic uncertainty, right adrenalectomy was performed. The final diagnosis was adrenal hemangioma with cystic degeneration.

Keywords

Adrenal glands; Hemangioma; X-Ray computed tomography.

Resumo

Um homem de 75 anos, assintomático, foi referenciado para a consulta de Urologia Oncológica devido a um incidentaloma da supra-renal direita, com a suspeita primária de feocromocitoma. Os valores de metanefrinas urinárias e plasmáticas e catecolaminas urinárias eram normais. Não apresentava captação aumentada de ^{123}I-mIBG na cintigrafia. A TC evidenciou uma lesão com 96x87 mm de maiores eixos axiais na supra-renal direita, encapsulada e predominantemente quística, com focos periféricos de captação de contraste. Pelas dimensões e incerteza diagnóstica, optou-se por realizar adrenalectomia direita. O diagnóstico final foi de hemangioma da supra-renal com degenerescência quística.

Palavras-chave

Glândulas supra-renais; Hemangioma; Tomografia computorizada por raios X.

Case Report

An asymptomatic 75-year-old male was referred to Oncologic Urology consultation because of a right adrenal incidentaloma reported on an outside CT as suspicious for cystic pheochromocytoma. Past medical history included obesity, arterial hypertension, dyslipidemia, type 2 diabetes and hyperthyroidism.

Contrast-enhanced CT showed a round, encapsulated, predominantly cystic lesion of the right adrenal gland, which measured 96x87 mm (axial plane). It showed a well-defined wall measuring 3 mm of maximum thickness. Peripheral, focal, serpiginous areas of contrast-enhancement were seen on late arterial and portal venous phases. The lesion was considered suspicious for malignancy. Correlation with ^{123}I-mIBG scintigraphy and surgical excision were recommended.

Plasmatic and urinary metanephrines and urinary catecholamines values were normal. There was no increased uptake of ^{123}I-mIBG on scintigraphy.

After multidisciplinary board discussion and consultation with the patient, due to the lesion's dimensions and diagnostic uncertainty, right adrenalectomy was considered the most adequate attitude.

The final diagnosis was adrenal hemangioma with cystic degeneration.

The patient is currently asymptomatic and under surveillance.

Discussion

Adrenal hemangiomas are rare benign lesions, usually incidentally identified.[1-3] The majority are of the cavernous subtype.[1,3] They are more common in women in the 6th decade of life, most frequently unilateral and around 4 cm at diagnosis.[1,2] They pose a significant diagnostic challenge on the preoperative setting, as differentiation from pheochromocytoma and other malignant lesions can be very difficult based on imaging alone, specially when lesions are larger than 4 cm, given that lesions above this size have significantly larger probability of malignancy.[1,2,3]

On unenhanced CT, they frequently appear as solid, well-delineated, hypoattenuating heterogeneous lesions that might have calcifications. The contrast enhancement pattern is variable. Small lesions may show mild or marked enhancement. Bigger lesions (usually > 3 cm) may show the typical enhancement pattern of hemangiomas, with peripheral nodular enhancement in late arterial phase with progressive centripetal filling in portal and delayed venous phases. Bigger lesions may also show areas of central necrosis and scaring with no significant enhancement.[1,2,3](Figs. 1,2)

On MR, adrenal hemangiomas are usually heterogeneous, hypointense on T1 and hyperintense on T2-weighted images. The patterns of contrast enhancement are similar to the ones described for CT. There is no diffusion restriction and no signal loss on out-of-phase imaging.[1,2,3]

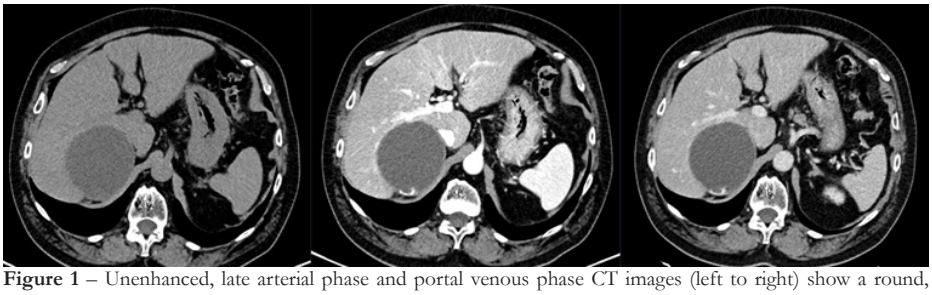


Figure 1 – Unenhanced, late arterial phase and portal venous phase CT images (left to right) show a round, encapsulated lesion of the right adrenal gland, with internal cystic content and globular peripheral contrast enhancement.



Figure 2 – Unenhanced, late arterial phase and portal venous phase CT images (left to right) on a different plane from figure 1 show the pattern of patchy, globular peripheral enhancement.

As preoperative diagnosis of adrenal hemangioma and exclusion of malignancy can be difficult, most of these lesions are surgically excised. However, some authors propose that lesions with characteristic imaging findings in asymptomatic patients without laboratory markers suspicious for pheochromocytoma may be kept under close surveillance or at least be excised without the necessity of pre-operative medication.[1](Fig. 3)

Conclusion

Adrenal hemangiomas are rare, typically incidental benign lesions. In this case, despite negative biochemical evaluation, the considerable size of the mass and the inability to exclude malignancy warranted surgical excision, which confirmed a hemangioma with cystic degeneration. Because large lesions may present with atypical/nonspecific imaging features, preoperative diagnosis remains challenging. Radiologists should be familiar with the characteristic enhancement patterns of adrenal hemangiomas, as recognizing these features may support a conservative surveillance approach in asymptomatic patients and potentially prevent unnecessary surgery.

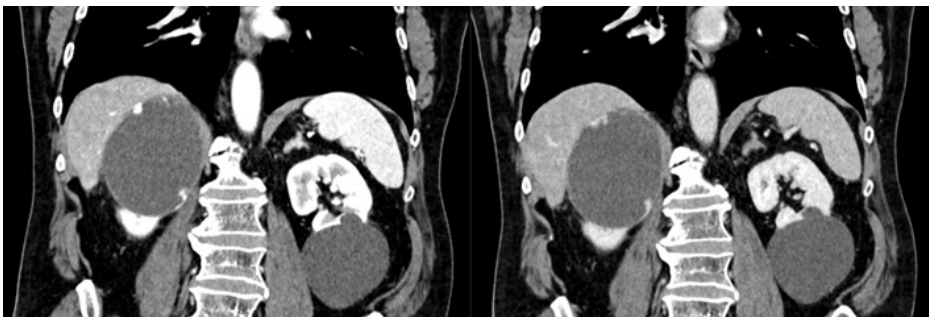


Figure 3 – Coronal images of the late arterial (left) and portal venous (right) phases better depict the pattern of patchy, globular peripheral enhancement.

Ethical Disclosures / Divulgações Éticas

Conflicts of interest: The authors have no conflicts of interest to declare.

Conflitos de interesse: Os autores declaram não possuir conflitos de interesse.

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Confidentiality of data: The authors declare that they have followed the protocols of their work center on the publication of data from patients.

Confidencialidade dos dados: Os autores declaram ter seguido os protocolos do seu centro de trabalho acerca da publicação dos dados de doentes.

Protection of human and animal subjects: The authors declare that the procedures followed were in accordance with the regulations of the relevant clinical research ethics committee and with those of the Code of Ethics of the World Medical Association (Declaration of Helsinki).

Protecção de pessoas e animais: Os autores declaram que os procedimentos seguidos estavam de acordo com os regulamentos estabelecidos pelos responsáveis da Comissão de Investigação Clínica e Ética e de acordo com a Declaração de Helsínquia da Associação Médica Mundial.

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