Adrenal incidentalomas: incidental in detection, not significance

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La détection accidentelle de tumeurs surrénales est de plus en plus fréquente. Même si les lignes directrices sur leur traitement abondent et sont très uniformes, 2 questions suscitent la confusion. Tout d’abord, comme la plupart de ces tumeurs sont bénignes et ne sont pas associées à des syndromes hormonaux, on a tendance à les oublier et on risque ainsi de ne pas diagnostiquer les cas qui sont en fait significatifs sur le plan clinique. Il faudrait examiner à peu près toutes les tumeurs surrénales et il est particulièrement important d’exclure le phéochromocytome. La deuxième source de confusion, c’est que l’on a tendance à appliquer à la question du statut hormonal des recommandations qui ont trait à l’investigation pathologique. Il importe d’aborder la question de la sécrétion hormonale séparément de celle des tumeurs malignes.

Given the more frequent use of advanced imaging techniques in the past 2 decades, it is not uncommon for unsuspected adrenal tumours to be detected in the course of investigations unrelated to the adrenal gland. For example, adrenal masses are found in up to 5% of abdominal CT scans. These tumours have been called adrenal incidentalomas by virtue of their serendipitous detection. Over 80% are benign and hormonally silent. However, a small but significant proportion are malignant or hormone secreting or both. This creates the dilemma of having to investigate many to detect the few that are abnormal and presents a particular challenge in the current climate of fiscal restraint. Guidelines and algorithms have proliferated, and the reader is directed to some recent comprehensive reviews of this topic. My purpose in this article is not to offer new recommendations but to discuss 2 areas of confusion that seem to have become widespread.

First, because most incidentally discovered adrenal tumours are benign and hormonally silent, physicians often refer to them as “just incidentalomas” and conduct no further investigation. The incidental nature of their discovery gives rise to the assumption that they are of incidental significance. This can also be the attitude of radiologists, whose reports on CT and MRI results sometimes extend to calling these masses benign and inactive and suggesting that no further investigation is required. However, imaging techniques provide a firm pathologic diagnosis only in some cases. Myelolipomas, cysts and locally invasive malignant tumours often have characteristic scan findings and can be identified without too much doubt. It is also possible in most instances to identify adrenal hemorrhage and some cases of infection. Beyond these conditions, which are all rare, other abnormalities cannot be clearly determined. In addition, it is not possible to know the functional status of an adrenal mass by simply viewing an image of it. For these reasons, every adrenal mass merits careful evaluation.

The significance of an adrenal mass may be underestimated by the physician when convincing clinical evidence of hormone excess is absent. It should be remembered that hormonally active adrenal masses may not announce themselves with clear-cut clinical features. For example, pheochromocytomas can be silent or present in unusual ways, as the case reported in this issue by Jason Ford and colleagues illustrates (page 923). Similarly, abnormal adrenocortical hormone secretion can be subclinical. Mild hypersecretion of cortisol accompanied by mild features of Cushing’s syndrome or none at all is particularly common. The need...
to remove the adrenal mass in cases of subclinical Cushing’s syndrome is still under debate, but even if surgical removal is not indicated it is important to establish the true baseline hormonal secretion of the tumour in order to facilitate proper long-term follow-up.

The second area of confusion relates to a tendency to mix up considerations regarding the pathologic status and the hormone-secreting status of the adrenal mass. Recommendations pertaining to the former are sometimes applied to the latter. Most authors have recommended surgical removal of masses greater than 6 cm in diameter, since large tumours have a higher chance of being malignant. This criterion is sometimes mistakenly mentioned in the context of assessing whether the tumour is hormone secreting. Physicians have been heard to remark that no hormonal assessment is required if the tumour is less than 6 cm in diameter. This is false. Indeed, aldosterone-secreting adrenocortical masses tend to be only 1–3 cm in diameter.

What, then, is a reasonable attitude toward adrenal incidentalomas? I hold that the view that all adrenal incidentalomas, except those with definite scan features of cysts, myelolipomas or lipomas, should undergo biochemical evaluation for hormonal function even when clinical features of hormone excess are absent. The approach to such screening would vary from centre to centre, depending on the availability of tests and on cost considerations. It would also vary from patient to patient, depending on whether there are clinical clues of hormonal syndromes. If there are, biochemical investigations can be targeted accordingly. It is particularly important to screen for a pheochromocytoma. As the case reported by Ford and colleagues demonstrates, a fine-needle aspiration biopsy is important to consider the possibility of metastatic disease.

When biochemical screening test results are normal, it is important to consider the possibility of metastatic disease in the adrenal glands. Fine-needle aspiration biopsy is particularly useful for the detection of this condition, and a positive result would prompt a search for the primary tumour. However, this technique is not useful in distinguishing benign from malignant primary adrenal tumours. Extensive investigation is under way to develop better CT, MRI and scintigraphic techniques to distinguish between benign and malignant primary adrenocortical tumours and to recognize pheochromocytomas. Although these techniques hold a lot of promise, their use in most centres is limited by cost considerations and lack of experience. Until these techniques are more readily available and cost effective, we must rely on the information provided by conventional CT and MRI images, such as shape, contour, margins, signal intensity and — especially — tumour size. Most authors recommend removal of tumours greater than 6 cm in diameter even when no other features suggest malignancy. Under all circumstances, it is important to address the issues of pathology and hormonal status separately and not confuse guidelines for them. If surgical removal is not the chosen option, an appropriate follow-up plan should be put in place.

References