

INCIDENTALOMA

INCIDENTALOMA

Definition An asymptomatic adrenal mass detected on imaging not performed for suspected adrenal disease is termed an incidentaloma. The aetiology includes benign and malignant tumours of the cortex and medulla or of extra-adrenal origin. These tumours can be either non-functioning (silent) or functioning (secreting excess hormones). Incidence Autopsy studies suggest a prevalence of clinically inapparent adrenal masses of the order of 2%, which increases with age. Radiological incidentalomas are seen in about 3% of scans at the age of 50, rising to 10% in the elderly . Investigation Incidentaloma embraces all adrenal pathology and so the steps to management are described here and the detail for each pathology will follow in the individual sections of the chapter. A clear evidence-based algorithm for assessing patients with adrenal incidentaloma has been derived (Figure 57.2 The following should be assessed in parallel: Harvey Williams Cushing , 1869–1939, Professor of Surgery , Harvard University Medical School, Boston, MA, USA. Sir Godfrey Newbold Hounsfield , 1919–2004, British electrical engineer, won the 1979 Nobel Prize in Physiology or Medicine for helping to develop the diagnostic imaging technique known as X-ray computed tomography . Cushing’s syndrome and virilising tumours are associated with higher rates of malignancy (50% and 30%, respectively). The optimal way to determine malignancy is by means of a non-contrast computed tomography (CT) scan and measurement of the density of the lesion by Hounsfield units (HU). Benign tumours are low density (≤ 10 HU). In cases of uncertainty , consideration is given to fluorodeoxyglucose (FDG)-positron emission tomography (PET) scanning, magnetic resonance imaging (MRI) with chemical shift or contrast CT and measurement of washout. Radiological findings suspicious of malignancy are shown in Summary box 57.1 .

Is the tumour functionally active? This is determined by:

- Clinical assessment
- 1 mg overnight dexamethasone suppression test (DST)
- Measurement of plasma or urinary metanephrines
- Plasma aldosterone-renin ratio (ARR)
- Sex hormones and steroid precursors

Summary box 57.1 Radiological features suspicious of adrenal malignancy .

Management All patients should be discussed in a multidisciplinary setting. Small (<40 mm), benign non-functioning tumours do not require surgery , but patients should undergo a follow-up CT/MRI at 6 months. There is no consensus about follow-up beyond that period. However, there is evidence that a tumour >30 mm has an increased risk of developing hyperfunction over time. Adrenalectomy is the standard of care for patients with unilateral tumours causing hormone excess. Adrenalectomy is recommended for all tumours >40 mm in diameter, tumours showing imaging characteristics of malignancy and tumours showing significant growth. Laparoscopic adrenalectomy is recommended for unilateral adrenal masses with radiological findings suspicious of malignancy and a diameter <60 mm, but without evidence of local invasion. Open adrenalectomy is recommended for unilateral adrenal masses with radiological findings suspicious of malignancy . An individualised approach is required for patients whose tumours fall outside the above categories.

Unilateral adrenal mass Radiological suspicion of malignancy No Yes Functioning Local tumour?
invasion No Yes No Yes No surgery Laparoscopic Diameter Open adrenalectomy ≤ 6 cm?
adrenalectomy No Individualised surgical approach Figure 57.2 Algorithm for the investigation of
adrenal incidentaloma. (After Fassnacht M, Arlt W, Bancos I et al . Management of adrenal
incidentalomas: European Society of Endocrinology Clinical Practice Guideline in collaboration with
the European Network for the Study of Adrenal Tumors. Eur J Endocrinol 2016; 175 (2): G1-G34.)
Diameter >40 /uni00A0 mm and >10 /uni00A0 HU density Contrast-enhanced washout CT Relative
 $<40\%$ Absolute $<60\%$ MRI chemical shift: no change in signal intensity on out-of- phase imaging
FDG-PET: positive uptake Yes

Revision #1

Created 2025-12-31 15:21:30 UTC by Omar Ayman

Updated 2025-12-31 15:21:30 UTC by Omar Ayman