Elevated hounsfield units and large tumour size on radiological imaging are both suggestive of functionality in incidental adrenal tumours

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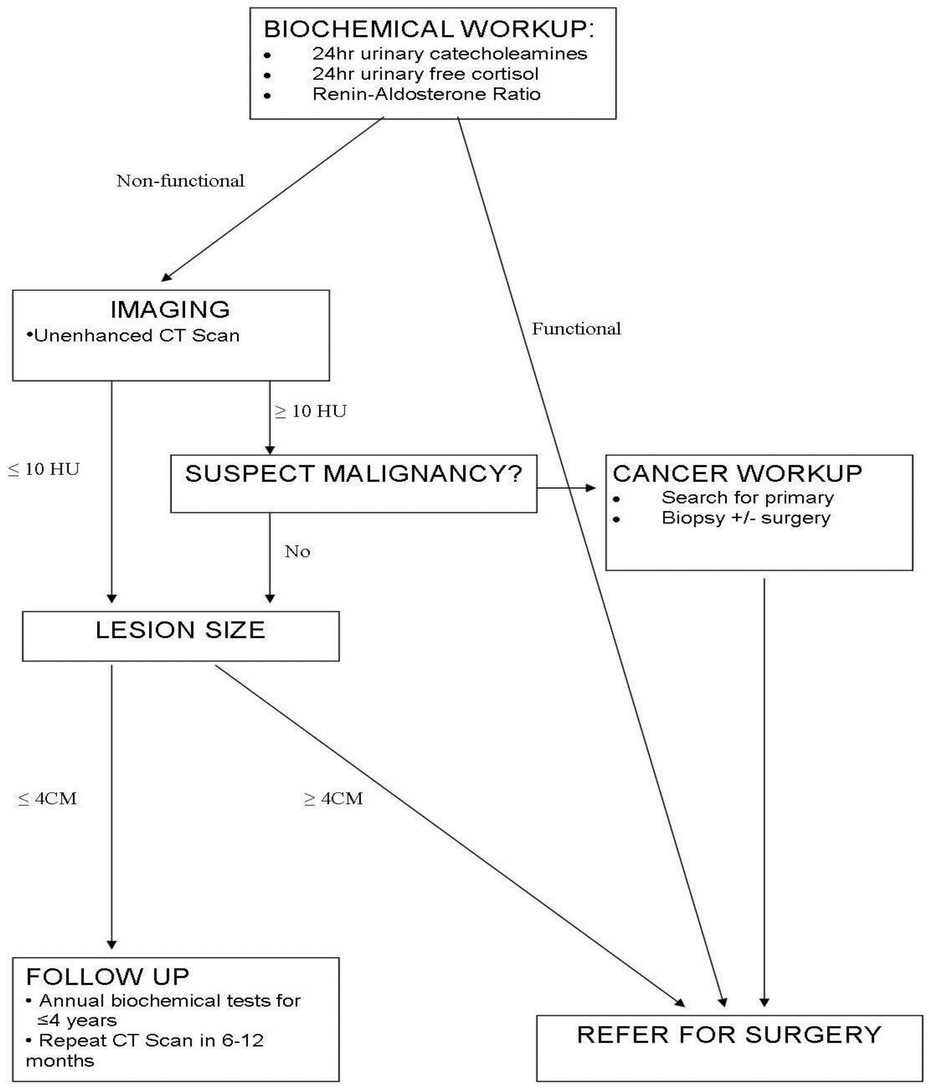
Introduction

• Widespread use of CT and MRI has led to an increase in the number of incidentally discovered adrenal masses.

• These patients are often subject to a battery of investigations – frequently normal and a drain to resources.

• Official guidelines are non-existent in the UK. A suggested investigatory pathway based on a National Institute for Health (NIH) algorithm is shown below.

• We set out to investigate the relationship between tumour characteristics on imaging and biochemical functionality.



Methods

• Retrospective case note study of 17 patients who had CT scans and biochemical investigations between June 2009 and January 2013.

• Mean age 68yrs, 8 male, 9 female.

• Patients were grouped into functional (n=4) and non-functional (n = 13).

• Radiological features – Hounsfield Units (HU) & Size mm - were analysed, expressed as mean + SD.

Results

- Functional tumours include 2 phaeochromocytomas & 2 adrenocortical carcinomas.
- Correlation coefficient between HU and size was 0.32.
- 24hr catecholamines and urine free cortisol were more commonly abnormal in functional tumours.
- Lack of statistical significance is most likely related to small sample size.

Tumour	HU	Size mm
Functional n = 4	64.35 + 10.34	68.25 + 45.39
Non-Functional n = 13	38.29 + 31.47	23.76 + 8.02
P-Value	0.13	0.11

Conclusions

- Our data suggests that tumours with size > 25mm, and HU > 40 are suggestive of functionality.
- This will allow for better selection of patients that need extensive investigation.
- Larger studies are needed to more accurately set thresholds for further investigation.

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