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## The Surgeon, Journal of the Royal Colleges of Surgeons of Edinburgh and Ireland



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# Incidentalology: A developing urological sub-specialty



A.T. Looney, G.J. Nason\*, B.B. McGuire, M.E. Kelly, D.W. Mulvin, D.J. Galvin, D.M. Quinlan, G.M. Lennon

Department of Urology, St. Vincent's University Hospital, Dublin 4, Ireland

#### ARTICLE INFO

Article history:
Received 20 July 2013
Received in revised form
15 August 2013
Accepted 19 August 2013
Available online 2 December 2013

Keywords: Incidental findings Clinical significance

#### ABSTRACT

Objective: To identify the incidence and features of significant incidental findings discussed at our departmental multidisciplinary team meeting (MDM).

The improved quality of radiological imaging has resulted in increased rates of incidental findings. Although some may be trivial, many have clinical significance and early diagnosis and treatment may be beneficial.

Methods: A retrospective analysis was performed of all cases discussed at the MDM between January 2012 and February 2013. Cases were divided into two groups — Group 1 consisted of patients whose initial imaging was performed for a urological presentation which resulted in a synchronous finding; Group 2 consisted of patients who were referred with a synchronous urological finding for discussion following investigation of an initial benign urological condition or a non-urological condition.

Results: 696 patients were discussed at 53 MDMs. 109 (15.7%) patients had incidental findings. 61 (56%) of these were in Group 1. 16 (26.2%) were synchronous malignant diagnoses, 25 (41%) were benign and 20 (32.8%) were indeterminate. 48 (44%) patients in Group 2-40 (83.3%) were renal in origin and 30 (75%) of these proceeded to surgery. The median tumour size was 3.2 cm (Range: 1.2 cm-10 cm). One patient had radio-frequency ablation. Two were referred for palliative care. Seven patients are under ongoing surveillance - the median size of these lesions is 3.6 cm (Range: 2.1 cm-8.3 cm).

Conclusion: A substantial workload is generated from the investigation of incidental findings discussed at MDM — these now represent the majority of the caseload for renal cancer surgery.

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#### Introduction

The ever increasing quality improvements in computed tomography (CT) and magnetic resonance imaging (MRI) have led to their increased usage in the staging of a wide range of conditions.<sup>1</sup> Improved sensitivity has subsequently increased the detection rate of 'incidental' or unsuspected ancillary findings.<sup>2</sup> Varying levels of incidental findings have been observed across many specialties — paediatric urology (7%),<sup>3</sup> cardiology (13%),<sup>4</sup> vascular (1%),<sup>5</sup> respiratory (24%)<sup>6</sup> and neurology (6.6%).<sup>7</sup>

<sup>\*</sup> Corresponding author. Tel.: +353 01 2213055; fax: +353 01 2773508. E-mail address: nasong@tcd.ie (G.J. Nason).

These unrequested findings often fall beyond the remit of the referring specialty resulting in significant concern for patient and clinician.

The resultant uncertainty regarding the significance of such incidental findings poses a considerable challenge to the referring clinician and the reporting radiologist alike, and often the solution involves referral for specialist opinion in the 'incidental' discipline. These findings may have clinical significance, with a subsequent "ripple-effect" altering the management and further treatment options. Ensuing investigations and management of incidental radiological findings may pose significant risk with subsequent interventions, with further delays in the management of the initial presentation. There are also definite indirect and direct cost implications. The risk however of not investigating these incidental lesions could potentially lead to disease progression and poor patient outcomes as well as the medico-legal consequences for the physicians.

Table 1 — Benign and indeterminate lesions in Group 1. Group 1 consisted of patients whose initial imaging was performed as part of urological investigation or staging for urological malignancy but resulted in a synchronous finding.

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The aim of this study was to identify the incidence and breakdown of significant incidental radiological findings discussed at our departmental multidisciplinary team meeting (MDM) and to determine the outcomes of these synchronous findings.

#### Methods and materials

A retrospective analysis was performed of all cases discussed at a weekly MDM in a tertiary referral centre from January 2012 to February 2013 inclusive. The consultant led multidisciplinary team includes the core specialties of Urology, Radiation Oncology, Medical Oncology, Radiology and Histopathology. Information was obtained from MDT reports, radiology and pathology reports and a chart review. Referral for discussion to the MDM is coordinated by the urology cancer nurse specialist following clinical review by one of the core teams.

This study was divided into two separate arms; Group 1 consisted of patients whose initial imaging was performed as part of urological investigation or staging for urological malignancy but resulted in a synchronous finding; Group 2 consisted of patients who were referred to the MDM with a synchronous urological finding for discussion following investigation of an initial benign urological condition or a non-urological condition. Patients in Group 2 were also referred following consultation request from non-urological specialties.

Incidental radiological findings were classified as clinically significant if they required intervention, ongoing surveillance of the incidental finding or subsequent referral to another specialty. Indeterminate findings were those which warranted referral to other services for further investigation to confirm diagnosis.

#### Results

Over the 14 month study period, 696 patients were discussed at 53 MDMs. Of these, 109 (15.7%) patients had incidentally discovered clinically significant radiological findings.

#### Group 1

There were 61 patients (56%) in Group 1 (urological patients being investigated or staged for urological malignancy). The initial urological malignancies included 39 renal cell carcinomas, 14 prostate adenocarcinomas, 6 bladder tumours and 2 testicular tumours. Of the 61 incidental findings, 16 (26.2%) were synchronous malignant diagnoses, 25 (41%) were benign findings and 20 (32.8%) were indeterminate findings. Of the malignant findings, five colorectal neoplasms, four renal cell carcinomas and one each of the following neoplasms; pancreatic, bronchial, endometrial, thyroid, Non-Hodgkin's Lymphoma and malignant melanoma. All were referred for further management to the appropriate specialty. Group 1 findings are listed in Table 1.

Of the four incidental synchronous renal cell carcinomas, two patients opted for surveillance (4.5 cm- T1b and 3 cm- T1a renal masses respectively), one patient had embolisation of the RCC (14 cm renal mass- T3b) and one patient (6 cm- T1b

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