

Incidental findings discovered during imaging: implications for general practice

Whether they are called incidentalomas, unexpected findings, or VOMIT ('victims of modern imaging technology'),¹ the issue surrounding incidental findings (IFs) discovered during radiological imaging will affect the future of medical practice and needs to be addressed.

IFs are those findings that are discovered by chance in the context of radiological diagnostics which can potentially affect the health of an individual (if not already a patient, they may now have become one). IFs can of course be life-saving but they can also be harmful to the 'patient.' It is not uncommon for a minor developmental anomaly, normal variant, or physiological feature to be identified as pathology on imaging.² A seemingly harmful lesion can lead to lifelong follow-up, further imaging and appointments, unwarranted treatment, and even radical surgery, only for the pathology to turn out to be benign. Furthermore, IFs can incur unnecessary financial costs, waste time, provoke anxiety (for patients and clinicians), and can have serious implications for the 'patient' regarding future medical and life insurance.³

While it can be argued that the harmful discovery of an IF is unintentional, the prevalence of IFs and their potential for harm is known a priori. If we are to first do no harm, should we change our mindset and start thinking of IFs as possible side effects of a medical procedure? Indeed, some even propose that consent should be obtained from 'patients' prior to imaging.⁴

INCIDENTAL FINDINGS ARE COMMON

From 1980 to 2010 the numbers of CT scans performed increased from <5 million to >80 million per year in the US, and from a quarter of a million to >3.5 million in the UK. Faster and more specific diagnoses are being made but the long-term benefits are not clear; measuring this value is difficult. The prevalence of IFs clearly varies with imaging modality, the body region imaged, and 'patient' age.⁵ On brain MRI the prevalence is 2.7% compared with 12.8% on body MRI and up to 8% of CT colonoscopies can reveal an IF that prompts further investigation and intervention.³ IFs are clearly common and with a mounting number of scans predicted to be performed over the next decade, the number of IFs can only snowball.

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IMPACT OF INCIDENTAL FINDINGS IN PRIMARY CARE

While an attempt to establish the impact of IFs within secondary care and imaging research has been made, the voice from primary care seems to have been lost.³ The expectation is that primary care physicians should 'handle' IFs discovered during research, during a hospital admission, or as a result of an outpatient consultation. GPs, however, have not been consulted on what could be described as an imposition.

Certain communities have explored the impact of managing IFs in more depth: in the UK, imaging researchers have convened to produce a minimum set of guidelines;² special interest radiology and surgical groups have developed follow-up protocols; and neurologists have described the challenges they face as a result of advances in neuroimaging.⁴ Nonetheless, there seems to be no consensus among radiologists⁶ when it comes to reporting or recommending IF follow-up, or among imaging researchers about how to handle IFs,³ and this lack of unity and clarity is mirrored amongst other clinicians — GPs included.

MANAGEMENT OF INCIDENTAL FINDINGS VARIES THROUGHOUT THE UK

The UK research imaging community are arguably world leaders in attempting to tackle the ethical management of IFs. Nonetheless, despite some guidance from the UK Department of Health (DH) and the National Research Ethics Service (NRES), there is no clarity regarding what constitutes best practice. Of the 87.5% of UK

imaging research teams studied who had a standardised contingency plan for disclosing IFs, there are widely differing extant protocols (and widely differing views on what imaging researchers think is ideal care) although most (62.5%) explained that the GP would at least be informed of any IF.⁷ The DH imply that the participant's GP should be involved with the actual disclosure of IFs³ perhaps reflecting that 43% of imaging researchers 'use' the participant's GP to break the news (although a smaller number [32%] feel that this is ideal practice with 25% of others advocating a more flexible ideal approach whereby it may be more appropriate for a radiologist, physician, treating physician, or a nurse to disclose the IF, depending on the situation).⁷ It is noteworthy that non-medical researchers, for example, psychologists and physicists, are significantly more likely to 'use' the GP for disclosure than medical researchers almost certainly due to a lack of expertise in the research group. The method of IF disclosure is variable with a face-to-face consultation occurring in 41% of cases and up to 28% saying that the GP routinely decides the method (including by phone or letter) despite most (70%) thinking that a face-to-face consultation is ideal care. While standards exist for the management of IFs, they are unfortunately ambiguous, have not been established by GPs, and they are certainly not applied consistently.^{2,7} Vague guidelines are unlikely to be in the best interest of the volunteers, patients or clinicians involved.⁷

THE ROLE OF PRIMARY CARE

GPs need to unite and take more ownership

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regarding how IFs are managed while we await consensus from hospitals, where most IFs are generated, and imaging research teams. This could be initiated through a stakeholder symposium (similar to that performed among the UK imaging research community)² with solutions ranging from, for example, educating GPs regarding optimal IF management pathways to clinical commissioning groups (CCGs) instigating hospital-based IF clinics. However, GPs need to stop generating IFs too. In primary care, patients present with a myriad of symptoms and signs. The reality for GPs is that most symptoms, investigated or not, will resolve with no long-term harm to the patient. In one US cohort study, 70% of patients presenting to the primary care physician had symptoms that self-resolved within 2 weeks, and 60% within 3 months, with no intervention taking place.⁸ Although making a careful risk assessment before pursuing investigation or intervention is part of a GP’s ‘day job’, incentives that ‘reward overactivity’ might confound this.⁹

Furthermore, there has been a drive towards increased access to investigations within primary care, as exemplified by policies allowing GPs to request MRIs for headaches and abdominal CTs to improve early diagnosis of pancreatic cancer. In addition, the desire for diagnoses or labels and an aspiration to please our patients and society are further drivers towards potential overdiagnosis: making a diagnosis that will never cause symptoms or death during a patient’s lifetime.^{9,10} Clearly an increase in IFs accompany the rise in overdiagnosis. The need for greater scrutiny is needed before requesting an investigation.

IMPACT OF INCIDENTAL FINDINGS IN PRIMARY CARE AND FUTURE MANAGEMENT

The IF epidemic will continue to grow and this will continue to impact on GPs’ workloads because patients, like research participants, expect to be told about an anomaly on their scan.² Whether self-generated or discovered through research or by other clinicians, the responsibility of the GP can no longer be ignored. An analysis of the current financial impact and

state of play within primary care is needed and mechanisms need to be put into place for managing IFs within primary care. Time and resources need to be directed towards those IFs that are most likely to be life-threatening. Ultimately, the ‘patient’ should be at the centre of this analysis and decision making. However, any recommendations or guidelines should incorporate the impact on GPs’ time, anxiety, and workload which are unknown.

It is timely to examine and measure the real impact of IFs within primary care and encourage the creation of consensual, ethical, and legal guidelines on how best to manage them. In doing so we need to understand, to plan, and to clarify how primary care will continue to handle incidental yet ‘anticipated’ findings on radiological imaging.

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Provenance

Commissioned; externally peer reviewed.

DOI: 10.3399/bjgp16X685777

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