

Incidental findings in the daily practice of radiology

With the development of diagnostic imaging, particularly magnetic resonance imaging (MRI) and computed tomography (CT), it is common to discover unexpected findings when reading and analyzing these studies.

First, let's review the most appropriate term in Spanish to describe this phenomenon. The words fortuito and accidental are synonyms, as they refer to something that occurs by chance or unexpectedly. However, in Spanish, the term incidental means that it is inferred to be caused by or related to the main finding.

These findings in diagnostic imaging have always been detected, although they are now seen more frequently. With regard to their discovery in conventional radiography images, I am reminded of a phrase used by one of my radiology professors, Dr. Jaime Otero Luna, who, when teaching his students, would say, "remember that the patient paid for the entire X-ray," pointing out, for example, in a chest X-ray, a clavicle eroded by rheumatoid arthritis or a cervical rib.

In principle, once detected, these findings should be described in the body of the report. However, depending on their nature, some of them should trigger an alert and prompt communication with the referring physician or, failing that, with the patient themselves. If a large abdominal aneurysm or a thoracic aortic dissection is detected during the reading of an MRI, it is our duty to communicate this critical finding. In contrast, this is not necessary if what we are detecting and describing is a cyst in the maxillary sinus. It is then desirable that the description of the finding mention whether it is serious or mild and eventually indicate whether it requires prompt management or follow-up. It is possible that other diagnostic images are available in which the finding is already visible, in which case the "discovery and description" of the finding is less relevant; in these cases, a brief mention of its evolution, for example, a change in size, will be useful.

Detecting and describing these findings may require more time spent reading the images. And when used for quality and education activities, tools such as peer learning, not describing these findings can give rise to a positive case for learning. It is also worth considering the scenario in which the radiological report is being made. How important is it to omit the detection and description of non-critical incidental findings in scenarios where speed of work and providing a rapid response to the referring physician's diagnostic question are paramount, such as in emergency radiology? In this scenario, the emergency physician wants concrete answers, such as whether or not there is a traumatic vascular injury, an abscess, or a spinal fracture. If a pneumothorax appears as an incidental finding, it is definitely relevant. This is not the case when the incidental finding detected is spondylolisthesis.

The overall incidence described is around 23%, but in examinations such as abdominal CT scans, its prevalence has been reported to be as high as 50% to 70%.

In spinal MRI images, incidental findings are considered to be those that, although located in the spine, have no clinical relevance due to their high incidence and benign nature, such as a vertebral hemangioma or a Tarlov cyst in the sacrum, as well as those that are not located in the spine, such as a renal cyst or cholelithiasis.

In some organs, such as the adrenal glands or the pituitary gland, the discovery of a focal lesion with no correlation to the patient's symptoms or atypical hormone levels is common, and in fact they are called incidentalomas, which is a term classified in the medical vocabulary for indexing descriptions in health sciences or Medical Subject Headings (MeSH).

Another way in which radiologists can assist referring physicians is by providing their opinion on the relevance of the findings, thereby avoiding additional tests that may be unnecessary and costly, not only in terms of money but also in terms of causing concern for patients and their families. In general, the tendency is to recommend rapid characterization, follow-up, or treatment when the incidental finding consists of a tumor-like mass or a vascular lesion with a risk of hemorrhage. Other findings, such as cholelithiasis, the discovery of cystic lesions, and pulmonary or thyroid nodules that can be characterized in the same examination but require some type of follow-up, can be left alone and do not require alarm associated with their detection. Possibly, some incidental findings in people for whom they are common at their age, such as dehydration of intervertebral discs or foci of leukoencephalopathy in adults, do not require any special follow-up.

In summary: it is good practice to include the existence or absence of incidental findings in our checklist when reading an imaging study. Likewise, report them, giving them the relevance they require according to their severity and the scenario in which the patient is being imaged. The radiologist is a key member of the medical team, who decides on the most appropriate action in terms of follow-up, if required.

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