Complications of Incidental Findings

Story from the Front Lines:

A woman in her 90s with a history of hypothyroidism and advanced dementia was brought into the emergency room after a fall at her assisted living facility. The fall occurred when her walker slid forward, leaving her to fall to the floor on her right hip. The emergency room evaluation noted no evidence of cardiac or neurogenic cause of her fall. Physical exam was significant for mild bruising over the right hip and plain radiographs were negative for fracture or dislocation. She underwent chest, abdomen, and pelvis computed tomography (CT) for reasons that were unclear. Unexpectedly, it demonstrated large volume ascitis and peritoneal enhancement, which was concerning for peritoneal carcinomatosis. She was subsequently admitted for an accelerated malignancy evaluation.

Discussion of options including discharging immediately to home or remaining for further diagnostic testing was discussed with the patient and her family. Due to her underlying dementia our patient had very poor short-term memory and lacked decision-making capacity. Her family chose to proceed with the next diagnostic procedure, paracentesis for cytology of ascitic cells. The patient expressed significant fear surrounding the procedure, which was technically difficult and required multiple passes under ultrasound guidance though was apparently without complication. The next two days were focused on discharge planning and our patient was in good spirits without complaints or changes in her physical examination. On the day of planned discharge, she was noted to have significant anemia with a 50% drop in her hemoglobin. A thorough physical examination did not reveal evidence of bleeding; no significant bruising, no gross blood on rectal examination and no changes in heart rate or blood pressure. Repeat CT of the abdomen was negative for retroperitoneal bleed, however did demonstrate slightly increased density of fluid in the intra-abdominal cavity that may have represented blood. She received two units of packed red blood cells with an appropriate rise in hemoglobin which remained stable thereafter. Of note, her cytology revealed no evidence of malignant cells. Given her age and frailty, along with the lack of any symptoms of an intra-abdominal malignancy, our recommendation was no further work up or intervention.

Teachable Moment:

The use of computed tomography (CT) imaging in the emergency room is rapidly increasing in frequency. Between 1995 and 2007 the number of CT scans performed in the emergency room increased from 2.7 million to 16.2 million (1). The resolution of the images has also improved, leading to increased unexpected and frequently non-clinically significant findings. The rates of incidental findings on emergency room trauma CTs are reported as 20-60%, with averages around 30% for abdominal CTs (2). The rates of incidental findings increase with age and female sex (3). Frustratingly, our ability to uncover these incidental findings with advanced imaging technology is ahead of our understanding of their natural history and optimal management.

Unexpected findings of unclear clinical significance can cause substantial uncertainty for the clinician and patient and lead to further invasive testing. Prior to moving forward with a potentially invasive diagnostic evaluation, the patient goals, life expectancy, and co-morbidities
must be carefully considered and balanced against the potential yield of the study at hand. If incidental findings may never become clinically significant or if the patient is not a candidate for further evaluation and treatment, then the clinician must engage the patient in a shared decision and act in accordance with their wishes (4).

Our patient, though a reasonable candidate for advanced imaging to assess for possible hip fracture, underwent a more extensive and inappropriate study. The incidental findings lead to an invasive evaluation with risks that, though small, were in excess of any likely benefit. She was part of the less than 1% of patients that experience blood loss anemia requiring transfusion due to paracentesis (5). The psychological distress and emotional toll on our patient was one that was preventable. While respecting the autonomy of our patients and their surrogates, physicians have a responsibility to protect their patients from harm. Avoiding overtesting and only offering interventions that are likely to have benefits in excess of their risks is an important first step. As said by the Dali Lama, “Our prime purpose in the life is to help others. And if you can’t help them, at least don’t hurt them”.

References:


