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Case 213

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Radiology

Case 213[1]

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2014 Diagnosis Please Learning Objectives
In submitting a diagnosis for this case, participants demonstrate the ability to

■ Recognize normal and abnormal findings as presented in the diagnostic images
■ Identify pathologic conditions indicated in the diagnostic images
■ Use clinical reasoning skills to generate a list of differential diagnoses

Accreditation and Designation Statement
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Disclosure Statement
The ACCME requires that the RSNA, as an accredited provider of CME, obtain signed disclosure statements from authors, editors, and reviewers for this case. For this educational activity the authors, editors, and reviewers have indicated that they have no relevant relationships to disclose.

History

A 75-year-old woman with a medical history of gastro-esophageal reflux disease and type II diabetes presented to the hospital with a 3-month history of gradually worsening headaches, vague upper abdominal pain, and lower back pain. The patient denied fevers, night sweats, contact with sick individuals, occupational exposure to infection, bleeding, immunodeficiency, intravenous drug use, alcohol or tobacco abuse, history of malignancy, family history of genetic disorders, and international travel. Physical examination revealed a skin-colored mass protruding from the right side of her forehead, but there were no other notable abnormalities. Her diabetes was managed with diet, and the only prescription medication she was taking was esomeprazole. She was not taking anticoagulants. Initial laboratory work-up revealed anemia and profound thrombocytopenia (hemoglobin level, 9.4 g/dL; platelet count, 16×10^9/L); these were refractory to aggressive treatment, including plasmapheresis, immunosuppression with prednisolone, and numerous transfusions. Contrast material–enhanced magnetic resonance (MR) imaging of the head was performed at admission to further evaluate the patient's headache and the mass on the patient's forehead (Fig 1). Ultrasonography of the abdomen was performed to evaluate the cause of abdominal pain (Fig 2). The discovery of liver lesions at US led us to perform contrast-enhanced CT of the chest, abdomen, and pelvis (Figs 3, 4). Contrast-enhanced MR imaging of the abdomen was performed to narrow the diagnostic considerations for the lesions identified at CT (Figs 5, 6). Bone marrow biopsy revealed no evidence of infectious or neoplastic processes. Endoscopy and colonoscopy were performed; however, they revealed no abnormalities. Further laboratory work-up included extensive testing for parasites, fungi, bacteria, and viruses, including the human immunodeficiency virus. All of the results were negative. On the 17th day of admission, the patient became acutely unresponsive, her condition deteriorated rapidly, and she died. Unenhanced head CT was performed at the time of the patient's acute decompensation (Fig 7).

Submit Diagnosis

Submit the most likely diagnosis to *http://rsna.org/dxplease* (use only for submission of diagnosis). Select the case from the Active Case List for which you are submitting a diagnosis. Only one case, one name, and one diagnosis per e-mail submission. Multiple diagnoses and multiple submissions will not be considered. ***Deadline:*** Midnight U.S. Central Time, November 10, 2014. Answer will appear in the January 2015 issue. Authors wishing to submit cases for Diagnosis Please should first write to the Editor to obtain approval for the case and further information.
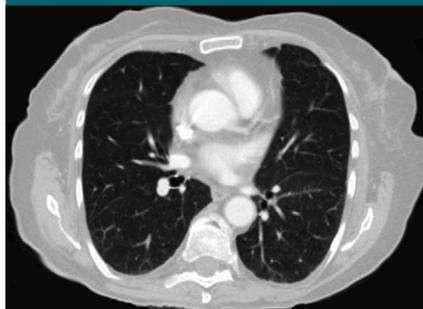
Figure 1
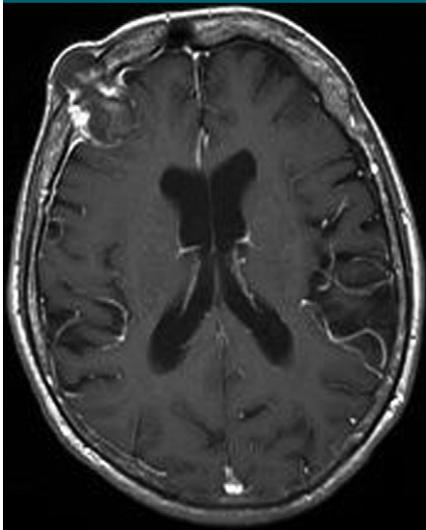
Figure 1: Axial T1-weighted (repetition time msec/echo time msec, 400/17; 5-mm section thickness) contrast-enhanced MR image of the brain (10 mL of gadopentetate dimeglumine administered intravenously over 15 seconds, Magnevist; Bayer Healthcare Pharmaceuticals, Leverkusen, Germany).

Figure 2

Figure 2: Transverse gray-scale US image of the upper abdomen.

Figure 3

Figure 3: Axial contrast-enhanced CT image of the chest acquired during the arterial phase (80 mL of iohexol 300 administered at a rate of 4 mL/sec, Omnipaque 300; GE Healthcare, Milwaukee, Wis).
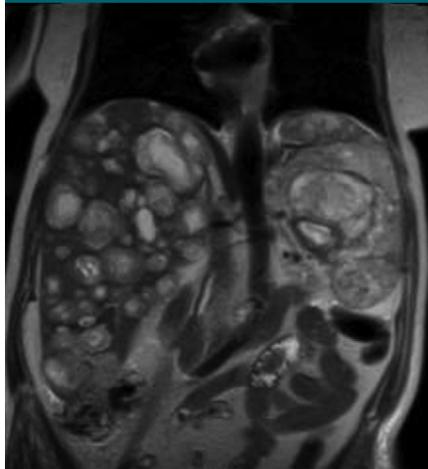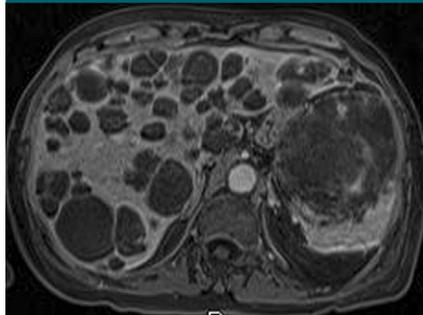
Figure 4

a.

b.

Figure 4: **(a, b)** Axial contrast-enhanced CT images of the liver during the arterial phase (80 mL of iohexol 300 administered at a rate of 4 mL/sec).
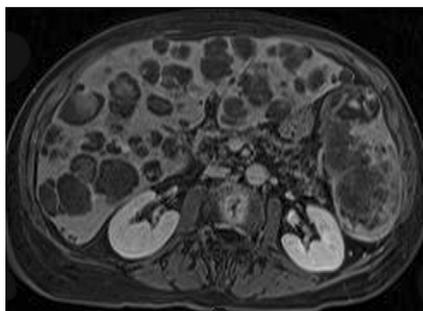
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Figure 5

Figure 5: Coronal T2-weighted (900/78, 6-mm section thickness) ultrafast spin-echo MR image of the abdomen (Symphony; Siemens Medical Systems, Erlangen, Germany).

Figure 6

a.

b.

Figure 6: Axial T1-weighted (4.3/2; 2-mm section thickness) dynamic contrast-enhanced ultrafast gradient-echo MR images of the abdomen (10 mL of gadopentetate dimeglumine) obtained during the **(a)** early and **(b)** late arterial phases.

Figure 7

Figure 7: Unenhanced axial CT image of the head at the time of acute mental status changes and clinical deterioration.