

Hyperphosphatemia in a 56-Year-Old Man with Hypochondrial Pain

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CASE

A 56-year-old Caucasian man with a history of colon cancer status post resection and chemoradiotherapy presented to the emergency medicine department with unintentional weight loss and 6 months of dull right hypochondrial pain with no change in bowel habit. The abdominal pain turned sharp and severe on the day of admission. He was not jaundiced, and no abdominal mass was felt. Initial laboratory investigations revealed a macrocytic, normochromic anemia [hemoglobin, 71 g/L (reference interval, 126–169 g/L); mean corpuscular volume, 98.0 fL (reference interval, 80.1–96.7 fL); mean corpuscular hemoglobin concentration, 320 g/L (reference interval, 308–384 g/L)]. Serum creatinine, alanine aminotransferase, aspartate aminotransferase, and bilirubin values were within the reference limits. The total protein concentration was 113 g/L (reference interval, 65–82 g/L), and the albumin concentration was 33 g/L (reference interval, 38–48 g/L). The phosphate concentration was markedly increased at 4.84 mmol/L (reference interval, 0.85–1.45 mmol/L). The total and corrected calcium concentrations were 1.98 mmol/L and 2.20 mmol/L (reference interval for both, 2.15–2.55 mmol/L), respectively, and the magnesium concentration was 0.76 mmol/L (reference interval, 0.75–1.07 mmol/L). The analytical indices (lipemia, bilirubin, and hemolysis) were within acceptable limits. The only medication the patient was taking was atenolol for hypertension.

Questions to Consider
<ul style="list-style-type: none">• What are the clinical causes of hyperphosphatemia?
<ul style="list-style-type: none">• What factors are known to cause interference with laboratory phosphate measurement?
<ul style="list-style-type: none">• How can physiological and analytical causes for increased phosphate be distinguished?

Final Publication and Comments

The final published version with discussion and comments from the experts will appear in the June 2010 issue of *Clinical Chemistry*. To view the case and comments online, go to <http://www.clinchem.org/content/vol56/issue6> and follow the link to the Clinical Case Study and Commentaries.

Educational Centers

If you are associated with an educational center and would like to receive the cases and questions 2-3 weeks in advance of publication, please email clinchem@aacc.org.

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