Question: 256

A previously healthy 11-year-old boy has developed nocturnal enuresis. He does not have glycosuria, and a serum glucose concentration is in the normal range. A urinalysis reveals no evidence of infection.

Of the following, the MOST likely abnormal laboratory finding is the serum concentration of

A. bilirubin
B. calcium
C. creatinine
D. potassium
E. total protein
The acute occurrence of nocturnal enuresis in a child who has no urinary tract infection, such as the boy described in the vignette, often is a sign of polyuria. The causes of polyuria include development of diabetes mellitus, renal disease, diabetes insipidus, hyperthyroidism, hypercalcemia, and hypomagnesemia. This boy does not have an abnormal glucose concentration and has no evidence of kidney infection. Hypercalcemia is more common in a previously healthy boy than is hypomagnesemia. It may be the first sign of hyperparathyroidism or perhaps vitamin D toxicity. Other symptoms of hypercalcemia can include altered mental status, nausea, vomiting, and coma. Hypomagnesemia usually is related to severe magnesium losses from the gastrointestinal tract or kidneys and is associated with other chronic illness or with congenital genetic magnesium loss. Hypokalemia might lead to muscle weakness or problems with cardiac contractility; hyperkalemia could affect myocardial function. Hypokalemia can affect renal concentrating ability and might lead to nocturnal enuresis, but few disorders acutely lead to hypokalemia in an 11-year-old child.

Bilirubin values do not influence renal concentration. An elevated creatinine could reflect severe renal disease, but polyuria is a fairly late marker of this disorder. The total protein in the serum does not influence urine volume.

Suggested reading:

