

Persistent Low Concentration of Human Chorionic Gonadotropin in a Non-Pregnant Female

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CASE

A 48-year-old woman presented for radio-iodine ablation therapy 3 months after undergoing a complete thyroidectomy performed for compressive goiter symptoms. The patient's medical history included stage-3 follicular variant papillary thyroid cancer with no nodal involvement and no metastatic disease. A 6.5-cm papillary carcinoma had been identified and removed surgically. Despite this surgical treatment, 3 foci were detected by ^{125}I uptake testing, a finding that prompted the use of therapeutic ablation.

Because the patient reported 5 months of amenorrhea, a quantitative serum human chorionic gonadotropin (hCG) test (hCG+ β assay, Roche Diagnostics) was performed to rule out pregnancy. The result was 7.0 IU/L (reference interval: <5.0) and the administration of 100 mCi I^{131} was cancelled owing to concern for a potential pregnancy. A repeat hCG test performed 4 days later was 7.0 IU/L. Follicle stimulating hormone (FSH) was determined to be 110 IU/L [reference intervals: 1.9 –11.6 (follicular phase), 1.4 –9.6 (luteal phase), and 21.5–131 IU/L (postmenopausal)].

Questions to Consider
<ul style="list-style-type: none">• What are the physiological sources of hCG that should be considered?
<ul style="list-style-type: none">• What are 3 potential etiologies of persistent low concentrations of serum hCG?
<ul style="list-style-type: none">• What can the clinical laboratory do to help clinicians interpret persistent low level, hCG results?

Final Publication and Comments

The final published version with discussion and comments from the experts will appear in the January 2008 issue of *Clinical Chemistry* in approximately 4-6 weeks. To view the case and comments online, go to <http://www.clinchem.org/content/vol54/issue1/> and follow the link to the Clinical Case Studies.

Educational Centers

If you are associated with an educational center and would like to receive the cases and questions 4-6 weeks in advance of publication, please email clinchem@aacc.org.

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