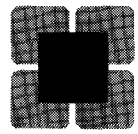

DAVID L. LONGWORTH, MD, AND JAMES K. STOLLER, MD, EDITORS

Internal medicine update, part II

PREMATURE VENTRICULAR CONTRACTIONS: RISK OF SUDDEN DEATH

When are premature ventricular contractions (PVCs) benign? When do they require treatment? First, in evaluating patients with PVCs, look for ventricular impairment. If left and right ventricular function is normal, the risk of sudden death is very small, and treatment is rarely indicated. However, as the ejection fraction falls below 40%, the risk of sudden death rises, and when it falls to 30% or less, the risk is very high. At this point, antiarrhythmic therapy is indicated, with a caveat: proarrhythmic effects (especially from class 1A antiarrhythmic agents) are likely in patients with an ejection fraction of 30% or less, so patients should be monitored closely.

PVCs are characterized electrocardiographically by a wide QRS complex, no preceding P wave, a retrograde P wave (sometimes), and a compensatory pause.

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EARLY DRAINAGE OF PARAPNEUMONIC EFFUSIONS

Exudative effusions often accompany bacterial pneumonia but usually resolve spontaneously with appropriate antimicrobial therapy of the pneumonia. A few effusions progress to empyema (frank pus in the pleural space) and subsequent loculation and fibrosis of the pleura. Treatment at this late stage may require several tube thoracostomies or even surgical decortication. These complications, however, can be prevented by early and complete drainage of the pleural space with a single chest tube. The goal is to intervene selectively, but early enough to be effective.

All parapneumonic effusions should be evaluated immediately by thoracentesis, a relatively low-risk procedure. Complete drainage is usually indicated if there is frank pus, bacteria on Gram's stain, a positive culture, or radiographic evidence of loculation. Sterile effusions without a turbid appearance do not warrant aggressive treatment.

In patients with parapneumonic effusions, the pH value may provide ancillary information in deciding whether chest tube drainage is warranted. As a general rule, low-pH effusions (range, less than 7.0 and up to 7.2) occur in patients at high risk for loculation. High-pH effusions (pH >7.3) present a very low risk. It should be noted that the literature does not support the use of a single cutoff pH value as a predictor. In addition, misinterpretation of the pH is possible if fluid specimens are not kept anaerobic and on ice prior to analysis.

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SUCCESSFUL PREGNANCY IN DIABETIC MOTHERS

Successful completion of pregnancy in a diabetic woman is the expected result; however, this will only occur if the patient commits herself to frequent perinatal examinations, adherence to a strict diet, aggressive home blood glucose monitoring, and frequent fetal surveillance.

Infants of diabetic mothers are at increased risk for macrosomia, neonatal metabolic complications, and congenital abnormalities, and for developing diabetes, as well. For the mother, pregnancy may worsen diabetic nephropathy, retinopathy, and gastroparesis.

Highlights from The Cleveland Clinic Foundation's continuing medical education course, "Intensive Review of Internal Medicine." Drs. Longworth and Stoller were course co-directors.

Strict glycemic control with insulin is mandatory. Oral hypoglycemic agents should be avoided because they cross the placental barrier and may result in prolonged neonatal hypoglycemia. During the second trimester, maternal alpha-fetoprotein levels should be assayed to check for neural tube defects in the fetus, which occur more frequently in diabetic mothers. In the final 3 months, the fetus should be monitored often and, towards term, consideration should be given to amniocentesis for the assessment of fetal lung maturity.

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DETECTING GRAVES' DISEASE IN THE ELDERLY

In the elderly and in patients with concomitant diseases, the presentation of Graves' disease usually is very subtle and often mimics the clinical appearance of terminal cancer, resulting in expensive—and inappropriate—workups. These patients may present with one or more of a variety of symptoms, including arrhythmias (occasionally life-threatening), heart failure, persistent diarrhea, and unexplained weight loss. They may have only what looks like a depressive illness. Clinical findings tend to be minimal, often limited to bright, shiny eyes and some lid retraction.

At the Cleveland Clinic, the preferred treatment is radioactive iodine ablation with total destruction of the thyroid gland. Most patients with Graves' disease, no matter how it is treated, have thyroid gland failure necessitating lifelong thyroid hormone replacement. Treatment with antithyroid drugs such as propylthiouracil or methimazole may require 6 months to 2 years for remission. Most patients will respond to drugs, but the real test of success is whether they remain in remission after drug treatment is discontinued.

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ANEMIA WORKUP: FIVE-STEP APPROACH

A simple five-step approach is helpful when working up anemic patients. The first step is the reticulocyte count, used to divide anemic patients into those with a blunted bone marrow response to the anemic state and those with a compensatory marrow response to anemia. The reticulocyte count is low if the bone marrow is not working; the count is elevated in patients with a peripheral destructive process or illness characterized by decreased red blood cell life span.

The second step is to determine the mean corpuscular volume (MCV). If it is above the normal range, megaloblastic anemia should be suspected. If the MCV is low, iron deficiency, thalassemia, and sideroblastic anemia are possible considerations.

The third step is to obtain a history of the patient's hemoglobin status. If the patient has a lifelong anemia, the diagnosis should focus on lifelong disorders, such as the hemoglobinopathies. If the anemic patient's hemoglobin was normal in the past, the clinician should seek another cause, such as a drug effect, infection, or other illness.

Fourth, a detailed history and careful clinical examination are essential. The history should cover such areas as current medications, recent cardiac surgery, changes in bowel habits, abdominal discomfort, and the use of alcohol.

Finally, reviewing the peripheral blood smear is mandatory. One must search for any distortion in red blood cell shape.

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