THIS WEEK *in the* JOURNAL

ORIGINAL ARTICLE

Diaphragm Disuse and Mechanical Ventilation

Weaning patients from mechanical ventilation after modest periods of diaphragmatic inactivity can be difficult. In this study, changes in the cross-sectional area and biochemical composition of biopsy specimens from brain-dead patients with inactive diaphragms at the time of organ donation were compared with similar measurements from patients undergoing thoracic surgery. The data were consistent with atrophy of the diaphragm after periods of inactivity on the order of a day.

SEE P. 1327; EDITORIAL, P. 1392

ORIGINAL ARTICLE

Coronary Calcium as a Predictor of Coronary Events across Ethnic Groups

In an analysis from the Multi-Ethnic Study of Atherosclerosis, 6722 men and women without cardiovascular disease from four ethnic groups underwent coronary calcium scanning and were followed for a median of 3.8 years. For each ethnic group, there was an increase in the risk of subsequent coronary events with an increase in the baseline coronary calcium score.

SEE P. 1336; EDITORIAL, P. 1394; CME, P. 1419

ORIGINAL ARTICLE

Cervical Length at Mid-Pregnancy and Risk of Cesarean Delivery

In this large observational study of primiparous women, the cervical length at mid-pregnancy was an independent predictor of the risk of cesarean section during labor at term and specifically of cesarean section performed for poor progress during labor. These findings suggest that the failure of labor to progress at term may be related to dysfunctional development of the uterus much earlier in pregnancy.

SEE P. 1346

SPECIAL ARTICLE

Drug-Review Deadlines and Safety Problems

The Prescription Drug User Fee Act (PDUFA) imposes deadlines for the completion of drug reviews by the Food and Drug Administration. This study showed that PDUFA regulations resulted in a concentration of approval decisions in the weeks immediately preceding deadlines. Drugs that were approved just before the deadlines, as compared with drugs approved at other times, had higher rates of subsequent safety problems.

SEE P. 1354

CLINICAL THERAPEUTICS

Hydroxyurea for the Treatment of Sickle Cell Anemia

An 18-year-old woman with sickle cell anemia presents with recurrent painful crises, and treatment with hydroxyurea is recommended. Hydroxyurea causes a shift toward the production of red cells containing fetal hemoglobin. A possible increase in the risk of acute leukemia due to hydroxyurea therapy remains the subject of debate.

SEE P. 1362; CME, P. 1417

MECHANISMS OF DISEASE

Cardiac Plasticity

This review explains how the heart responds to physiologic or pathologic conditions. Exercise, pregnancy, and postnatal growth cause physiologic growth; neurohumoral activation, hypertension, and myocardial injury cause hypertrophic growth, which increases the risk of heart failure and malignant arrhythmia. Atrophy of the heart can arise from protracted bed rest, prolonged weightlessness, or mechanical unloading with a ventricular assist device.

SEE P. 1370; CME, P. 1418

CASE RECORDS OF THE MASSACHUSETTS GENERAL HOSPITAL

A 10-Year-Old Girl with Dyspnea on Exertion

A 10-year-old girl was seen because of dyspnea and noisy respirations. Three weeks earlier, sharp pain in the chest and shortness of breath had developed abruptly, followed by dyspnea and noisy respirations with exertion. Symptoms did not improve with the use of bronchodilators. A diagnostic procedure was performed.

SEE P. 1382

CLINICAL IMPLICATIONS OF BASIC RESEARCH

Making Connections, Preventing Arrhythmia

Inducing skeletal myoblasts to express a gap-junction protein prevents arrhythmias when these myoblasts are used to treat myocardial infarction.

SEE P. 1397