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Perinatology

MIXED CORD COMPRESSION One hundred twenty-two consecutive patients were electronically monitored in labor. The purpose was to relate a variable acceleration–acceleration:variable deceleration ("mixed cord compression") pattern to umbilical cord compression by comparing the monitor patterns to abnormal cord positions, length, or presentation as noted at delivery. Standard, accepted definitions of fetal heart rate patterns were used in addition to this combined pattern. Thirty-four (27.9 per cent) babies had abnormal cord positions. Of the 34, 28 (82.4 per cent) of these cords were in patients with variable decelerations of the mixed acceleration:variable deceleration pattern; 19 of the 28 (67.8 per cent) showed the mixed pattern, and nine (32.3 per cent) were variable decelerations. Accelerations alone had the same incidence of abnormal cord positions as normal monitor records. A review of the literature on the dynamics of umbilical cord compression and speculation on the results, as they relate to cord compression, are included. *(Goldkrand JW, Speichinger JP: "Mixed Cord Compression," Fetal Heart Rate Pattern, and Its Relation to Abnormal Cord Position. Am J Obstet Gynecol 122: 144–150, 1975.)*

FHR MONITORING A new method of continuous fetal heart rate monitoring, employing for cardiotachometry the fetal electrocardiogram obtained from electrodes placed on the maternal abdomen, was evaluated over a period of 26 months at the Lying-in Division of the Boston Hospital for Women. A total of 2,460 hours of intrapartum monitoring was analyzed. This "noninvasive" method of fetal ECG-based monitoring was shown to be as accurate as the direct scalp electrode method and more reliable than indirect ultrasound. Useful fetal monitoring, from very early labor to the time of delivery, was possible in 91 per cent of 507 patients using maternal skin electrodes alone. Beat-to-beat variability determinations, possibly of significance in evaluating fetoplacental function in the antepartum period, were precise and without the artifactuality of ultrasonic or phonocardiographic methods. *(Leventhal JM, and others: A New Method of Fetal Heart Rate Monitoring. Obstet Gynecol 45: 494–500, 1975.)*

MATERNAL HYPERTHERMIA The role of hyperthermia in the absence of infection has been investigated in the pregnant baboon. Twenty-three near term animals were used. Catheters were placed in the maternal esophagus and fetal esophagus. Maternal temperature was raised to between 41 and 42 C by applying external heat. The temperature gradient between fetus and mother (ΔT_{F-M}) was 0.47 degree C under steady-state conditions with maternal temperature 38 C, and rose to 0.75 degree C at 42 C. Hyperthermia caused a twofold increase in uterine activity: metabolic acidosis developed in the mother and profound acidosis and hypoxia developed in the fetus. There was also a marked fall in blood pressure with increases in heart rates of both mother and fetus; late deceleration of the fetal heart rate occurred at a higher oxygen tension and pH_a than has been observed under normothermic conditions. *(Morishima HO, and others: Increased Uterine Activity and Fetal Deterioration during Maternal Hyperthermia. Am J Obstet Gynecol 121: 531–538, 1975.)*