Augmentation of Labor

Because the resulting uterine hyperstimulation often is too forceful and sustained to be compatible with the safety of the mother and fetus, oxytocin generally should not be used to augment labor that is progressing normally. To augment hypotonic contractions in dysfunctional labor, it rarely is necessary to exceed an infusion rate of 10 mIU/minute, and doses of >20 mIU/minute rarely are effective when lower concentrations fail. Potential complications of overstimulation include trauma of the mother or fetus due to forced passage through an incompletely dilated cervix, uterine rupture, and compromised fetal oxygenation due to decreased uterine perfusion. In the setting of dysfunctional labor, as seen most frequently in nulliparous women, oxytocin can be used to advantage by experienced obstetricians to facilitate labor progression. Oxytocin usually is effective when there is a prolonged latent phase of cervical dilation and when, in the absence of cephalopelvic disproportion, there is an arrest of dilation or descent. Epidural anesthesia can impair the reflex stimulation of endogenous oxytocin during the second stage of labor; in this setting, the cautious administration of oxytocin may facilitate labor progression.

Third Stage of Labor and Puerperium

Postpartum hemorrhage is a significant problem in developed nations and is of even greater importance in underdeveloped countries. After delivery of the fetus or after therapeutic abortion, a firm, contracted uterus greatly reduces the incidence and extent of hemorrhage. Oxytocin (10 IU intramuscularly) often is given immediately after delivery to help maintain uterine contractions and tone. Alternatively, 20 IU of oxytocin is diluted in 1 L of intravenous solution and infused at a rate of 10 ml/minute until the uterus is contracted. Then the infusion rate is reduced to 1 to 2 ml/minute until the mother is ready for transfer to the postpartum unit. If this is ineffective, ergot alkaloids such as *ergonovine maleate* (ERGOTRATE) or its methyl analog *methylergonovine maleate* (METHERGINE) or the prostaglandin analog *misoprostol* may be used in normotensive patients. The ergot alkaloids are discussed in more detail in Chapter 11; prostaglandins are discussed in Chapter 25.