Communications

Epidural Anesthesia and the Course of Labor and Delivery

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Whether epidural anesthesia (EA) significantly alters labor and delivery in ways other than pain relief has been controversial. Although a randomized trial has not been performed, present evidence in the literature supports the view that the use of EA prolongs labor or increases instrumental delivery, increases the need of oxytocin augmentation, and is associated with postpartum complications.

Epidural Anesthesia and the Second Stage of Labor

Studd et al[1] compared the duration of the second stage in 1,528 spontaneous unaugmented labors with and without EA. In the 126 patients with EA, the second stage was prolonged by one half in primipara mothers and prolonged $2^1/_2$ times in multiparas. Schussman et al[2] in a study of 525 low-risk obstetrical patients found the length of the second stage doubled in the 320 patients who received EA compared with the 205 who received local or no anesthesia. One small study[3] also found a longer first stage.

Epidural Anesthesia and Oxytocin

Schussman,[2] in his analysis of 416 patients with spontaneous onset of labor, found that oxytocin was used in 67 percent of patients with EA compared with 40 percent without EA. Wieczorek and Sobiech[3] found higher oxytocinase activity in women with EA compared with those who received no anesthesia during labor. Although Raabe and Balfrage[4] state that EA causes a temporary decrease in uterine activity, their data do not prove that the effect is only temporary. They found no change in frequency of contractions, but contraction intensity dropped with EA. By 40 minutes after onset of EA, contraction intensity as measured by an intrauterine catheter still had not reached that seen at 20 or 30 minutes prior to EA. Supporting the negative effect of EA on uterine function is that of the 23 women who had vaginal deliveries, ten deliveries required oxytocin augmentation for uterine inertia following the EA, and nine deliveries were by vacuum extraction.

Epidural Anesthesia and Forceps Delivery

Hoult et al[5] studied prospectively 486 consecutive vaginal vertex deliveries. Overall, forceps use was five times higher in the 211 patients who received EA than in those who did not. Malrotation was three times more common in patients with EA. Seventy percent of the primiparas and 40 percent of the multiparas with EA required instrumental delivery compared with 20 percent and 6 percent, respectively, for the group without EA. This increase in forceps use with EA was consistent whether EA was chosen electively prior to or during labor. Hoult felt the increase in malrotation was due to the decrease in tone of the pelvic floor muscles so that the occiput is not easily rotated anteriorly as the head is pushed against the gutter normally formed by the unrelaxed levator ani muscles. Hibbard et al[6] noted they inform patients that forceps use increases three to four times with EA. Studd et al[1] found a 20-fold increase in rotational forceps in the 282 patients with EA of the 1,955 spontaneous labors studied.

McQueen and Mylrea[7] studied 100 women with EA and found that the rotational forceps rate could be reduced by one half if patients were

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allowed to remain on their left side for up to one hour after full cervical dilation before pushing. This recommendation has been repeated by others.[1,8]

Potter and MacDonald[9] did not find an increase in forceps use in 1,000 women given EA, but their definition of second stage is different from that in common use in the United States. They noted that "onset of the second stage was diagnosed by the usual criteria, the most certain being that the head was visible at the introitus during a uterine contraction. When the head was not visible and second stage was diagnosed by other means, expulsive effort was not immediately encouraged." Thus it appears that they allowed a long second stage, as recommended by McQueen and Mylrea.[7] Another difference in management to that of many anesthesiologists is that anesthesia was considered satisfactory if the pain, rather than being completely relieved, was "tolerable" and did not interfere with the conduct of delivery. Thus it is probable that they used a lighter level of anesthesia and allowed a prolonged second stage compared with current practice in the United States.

Other Untoward Effects of Epidural Anesthesia

Morgan et al[10] reported on 200 patients receiving EA. Thirty-five percent complained of postpartum urinary retention, with 23 percent requiring catheterization for up to 24 hours. Eighteen percent complained about the loss of motor power, which remained for four to eight hours. Ten percent complained of severe backache. Crawford[8] reviewed 18,000 patients and found a 3 to 5 percent incidence of total failure of pain relief. He also noted a consistent 1.5 percent to 2.0 percent who declared that they were deprived of the pleasure of giving birth. Less common complications include inadvertent dural tap, headache, total spinal block, hypotension, inadvertent intravenous anesthetic injection, systemic reaction to the agent, and broken catheter fragments left in the epidural space. EA may result in increased use of oxytocin, increased instrumental delivery, and prolongation of labor and thereby may indirectly increase the risk to mother and fetus, although no evidence of increased perinatal mortality has been found.

Management of Labor in Which Epidural Anesthesia Is Used

EA is a significant intervention about which patients should be well informed. Ideally, education should occur prior to the onset of labor so that the patient can be knowledgeable about her options during labor and delivery.

Because of the strong association with need of oxytocin augmentation after EA,[2,4] consideration should be given to placing an intrauterine pressure catheter early in the course of labor to measure contraction strength if EA is to be used.

If avoidance of instrumental delivery is desired, allowing the degree of anesthesia to decrease[5,11] or using a lighter level of anesthesia as described by Potter and MacDonald[9] should be considered. Another recommendation to avoid rotational forceps is to allow the woman to remain on her side for up to one hour after complete cervical dilation before beginning pushing. It may be more considerate of the mother and fetus to question the use of EA for pain-free labor and delivery than to accept the complications associated with EA. Although there are methodologic problems with many studies of epidural anesthesia, it does appear that it may significantly alter the course and management of labor and delivery.

References

1. Studd JW, Crawford JS, Duignan NM, et al: The effect of lumbar epidural analgesia on the rate of cervical dilation and the outcome of labour of spontaneous onset. Br J Obstet Gynaecol 87:1015, 1980
2. Schussman LC, Wolley FR, Larsen LC, et al: Epidural anesthesia in low-risk obstetrical patients. J Fam Pract 14: 851, 1982
3. Wieczorek E, Sobiech KA: Oxytocinase activity in the course of continuous lumbar epidural analgesia. Acta Obstet Gynecol Scand 59:421, 1980
4. Raabe N, Balfrage P: Epidural analgesia in labour. Acta Obstet Gynecol Scand 55:305, 1976
5. Hoult IJ, MacLennan AH, Carrie LES: Lumbar epidural analgesia in labour: Relation to fetal malposition and instrumental delivery. Br Med J 1:14, 1977
6. Hibbard B, Weaver JB, Pearson JF, et al: Lumbar epidural analgesia in labor. Br Med J 1:286, 1977
7. McQueen J, Mylrea L: Lumbar epidural analgesia in labour. Br Med J 1:640, 1977
8. Crawford JS: Evaluation of epidural analgesia. S Afr Med J 59:433, 1981
9. Potter N, MacDonald RD: Obstetric consequences of epidural analgesia in multiparous patients. Lancet 1:1031, 1971
10. Morgan BM, Rehor S, Lewis PJ: Epidural analgesia for uneventful labour. Anaesthesia 37:57, 1980
11. Sweeney DB: Trial of bupivacaine in extradural anaesthesia in obstetrics. S Aust Clin 5:151, 1971

Binge Eating, Vomiting, and Weight Fear in a Female High School Population

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Bulimia nervosa is an eating disorder characterized by alternating episodes of binge eating and rigid dieting and is frequently associated with self-induced vomiting following binges.[1,2] Another determining characteristic is a morbid fear of fat. These behaviors are often found in patients with anorexia nervosa, although the latter disorder involves less frequent binging behavior. Furthermore, anorexia nervosa involves self-induced loss of weight with severe emaciation and persistent amenorrhea.[2]

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