

Utilization of Anesthesia During Labor

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Abstract

Labor causes severe pain for many women. Many women request pain management during labor and delivery. Indeed, there is justification for analgesia, sedation, or anesthesia during painful labor.

Modern obstetric practice encourages using epidural analgesia to manage pain during labor [1,2] Using non-pharmacological pain management methods, including support during labor, can reduce obstetrical interventions and increase breastfeeding rates while improving the mother's satisfaction without increasing morbidity

Keywords: anesthesia for labor; sedation; childbirth

Introduction

Labor causes severe pain for many women. Many women request pain management during labor and delivery. Indeed, there is justification for analgesia, sedation, or anesthesia during painful labor.

Modern obstetric practice encourages using epidural analgesia to manage pain during labor [1,2] Using non-pharmacological pain management methods, including support during labor, can reduce obstetrical interventions and increase breastfeeding rates while improving the mother's satisfaction without increasing morbidity [3,4] Unlike other types of pain, the intense sensations experienced by women in labor are usually not a sign of danger or pathology. During labor, pain causes the vital function of producing hormones such as endorphins and oxytocin [5,6]

An "Interim Update" in 2019 by the American College of Obstetricians and Gynecologists published the following recommendations and conclusions:

•"Neuraxial analgesia does not appear to increase the Cesarean delivery rate and, therefore, should not be withheld for that concern.

•In the absence of medical contraindications, maternal request is a sufficient medical indication for pain relief during labor." [7]

This article will describe the utilization of anesthesia during labor.

Discussion:

For generations, childbirth has come with intense pain that many women have described as excruciating and scary. From the day of conception up until delivery, the impending doom of the said pain lingers around until the fetus is born. Nonetheless, this didn't stop many women from giving birth. With time and research, different pain management methods have become available for labor; a few include anesthesia.

History of Anesthesia for Labor

Anesthetic pain management during labor dates to 1500, when it was fiercely frowned upon [8] With the discovery and recognition of its use, women also protested for its adoption into modern medicine [8]. Its glorification became apparent after Queen Victoria benefited from chloroform during the birth of Prince Leopold [8]. Indeed, history changed, and the birth of pain-free labor was the new norm. Women became more relaxed during delivery with less anxious expectations. Yet not every culture shares a positive attitude toward this. Some said it was morally wrong due to its religious ties to the bible, which states that women should feel pain during labor. Others showed safety concerns for the mother and the incoming baby [9]. Women who opted for anesthesia were called weak [9]. Feminists encouraged its use, and natural childbirth became a movement [9]. Anesthesia was the ultimate cause of this trouble. It divided opinions, and the future of childbirth became even more chaotic than it seemed before.

Why Are Individuals Not Receptive To Pain Management With Anesthesia

Despite several attestations to severe labor pains, why would anyone want to experience this pain? Socioeconomic factors such as age, income, and education play a pivotal role [10].

•Age: Research conducted in the eastern region of Saudi Arabia showed that women between the ages of 25 to 35 are more willing to accept epidural anesthesia. In contrast, those under 20 and above 35 are more likely to decline its use [11].

•Income: Women of low-income backgrounds are more likely to refuse anesthesia during labor [11]. Most uninsured moms were more willing to accept anesthesia if they didn't have to worry about the cost (10). However, the study from Harkins et al. also emphasizes that this idea could be misleading [10]. Facilities in low-income neighborhoods could sometimes be understaffed with anesthesiologists or need more resources to provide

such care during labor [10]. Even if the care is requested, regardless of income status, the facility may need more time to be ready to deliver such services.

• **Education:** Others need to know that anesthesia is available for labor pains. Those aware of its existence may need to be fully aware of the different types of anesthesia available. Education plays a huge role in prompting an individual to seek such needs. "Women with a high school certificate or below were found to be less aware "of epidural anesthesia"" [11]. Also, healthcare workers must provide the information needed to make an informed judgment to utilize anesthesia for labor pains properly. Limited access to early education could impact an individual choice to accept analgesics during labor [14].

Prior unpleasant experiences with anesthesia may not prompt individuals to use anesthesia for childbirth, making them lean towards natural remedies like warm water, massage/back rubs, and walking. Sometimes, anesthesia may fail to provide the necessary results they intend to give (12). Others may be affected by allergic reactions. Side effects like constipation, headache, itchiness, and backache after labor make it uncomfortable for the mom, who is trying to focus on the stress of caring for a newborn [13].

Furthermore, not all women are good candidates for receiving anesthesia during labor. A few risk factors are high BMI and complex spinal anatomy [14]. These associated health risks may outweigh their benefits, which should be accounted for. Safety should always be a priority for all healthcare providers.

Types of Anesthesia Available for Childbirth

The most commonly known anesthesia is epidural anesthesia, yet many more pharmacological options are available. They are divided into regional and non-regional analgesics. This section will briefly overview the many options available to women during labor.

Regional Analgesia:

- **Epidural:** As stated, it is the most common form of anesthesia known to women for labor pains. It is a mixture of opioids and local anesthetic, usually delivered below T8/T10 (for vaginal deliveries) or T4 and below (for C-sections) [14]. Contraindications to this medication are cardiac disease, local infection of the spine area, increased intracranial pressure, or spinal injuries [14]. Common side effects are prolonged labor and hypotension [14].
- **Pudendal Nerve Block:** It is administered between S2-S4 in the lower vaginal, vulva, and perineal area but has a 50% chance of failing to provide relief [14].
- **Paracervical Nerve Block:** They block paracervical ganglion but do not relieve uterine contraction and may cause fetal bradycardia [14].

Non-Regional Analgesics:

- **Entonox** is a mixture of 50% oxygen and nitrous oxide gas [14]. Mostly appreciated if regional nerve blocks are contraindicated. Common side effects are nausea, vomiting, and disorientation [14].
- **Pethidine:** They are administered intramuscularly (14). Though a great option, respiratory depression is possible, primarily if the fetus is not delivered 3-4 hours after it is administered [14].
- **General Anesthesia:** Though failed intubation is a risk, general anesthesia is used for emergency C-sections, which is impossible with epidural anesthesia [14].
- Other options available are morphine or patient-controlled analgesics using fentanyl.

Benefits of Utilizing Anesthesia During Labor

Anesthetics are utilized for pain management during labor. Women find it useful because it helps them relax by reducing stress and allows them to participate in the birth process [19]. Nulliparous women have longer active labor and delivery phases than multiparous women, but the process of labor and delivery is long overall [20]. Rest is crucial within this time. Using anesthesia for rest is vital for a vaginal delivery since much effort is needed to push the fetus [19,21]. It is also beneficial to women with hypertension. "It is recommended to perform continuous spinal anesthesia early in labor for hypertensive pregnant women, which can effectively reduce "their" stress reaction." [19]. As such, the fetus will receive good oxygen supply.

Anesthesia may improve contraction patterns. "Epinephrine levels decrease after initiation of epidural analgesia. This decrease in alpha- and beta-adrenergic receptor stimulation may enhance uterine perfusion leading to a more effectual contraction pattern. This is likely due to greater sensitivity of the uteroplacental vascular bed to catecholamines in comparison to systemic vasculature" [21].

Risks Associated With Using Anesthesia During Labor

Indeed, all pharmacological interventions come with their risks, as does anesthesia use for labor pains. Research suggests that anesthesia increases the dangers of instrumental deliveries (15,16). Several "meta-analyses suggest increased instrumental vaginal delivery rates associated with epidural analgesia" [15]. Though, these results may be misleading. Anesthesia was discontinued for some women receiving epidurals, yet reduced instrumental deliveries were insignificant, suggesting that more research is warranted [15].

A severe complication of epidural anesthesia is a subdural hematoma. Two cases were reported in an article from Chou et al. [17]. Two women were readmitted to the hospital after a diagnosis of subdural hematoma from previous epidural anesthesia was administered for labor pains [17]. As previously noted, a common complication of epidural anesthesia is headache. These patients experienced severe headaches days after being discharged home. They mistakenly had a dural puncture, and prompt care was initiated. Subdural hematoma is a severe complication of epidural anesthesia, but the outcomes are usually positive if immediate care is initiated [17].

General anesthesia during labor is rare and is mostly utilized for emergency cesarean births. However, it is still valuable to identify its risks. A common risk is failed intubation. "Pregnancy is associated with a higher "chance" of failed endotracheal intubation, with an estimated incidence of 1:250 compared to 1:2000 in non-pregnant patients...associated with anatomical changes that increase the likelihood of difficult intubation" [18]

Conclusion

The utilization of anesthesia during labor plays a unique role in the history of medicine. Though atypical in the past, it is increasingly adopted by many women for their birthing process. Childbirth is a special moment for most women, and being able to experience the process in a stress-free environment is a bonus. Healthcare providers must provide quality and early education to families so that they can make informed judgments. Every pharmacological intervention comes with its risks, as does anesthesia for labor pain management.

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