

Paracervical Block in Obstetrics and Gynecology

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RENEWED interest in paracervical block anesthesia has been evident in recent years. This interest, together with refinements in technique and extension of indications, has led to a much wider application of this safe and versatile type of local anesthesia. For over three years, we have pursued the investigation of the ways in which paracervical block can be applied to advantage in both obstetrics and gynecology. This communication reports our findings and experiences in this study.

TECHNIQUE AND ARMAMENTARIUM

Utilizing basic knowledge of the visceral afferent nerve pathways from the cervix and relatively simple equipment, the block is easily established. Pain impulses originating in the cervix travel along its posterolateral aspects in sensory channels into the uterosacral ligaments and/or

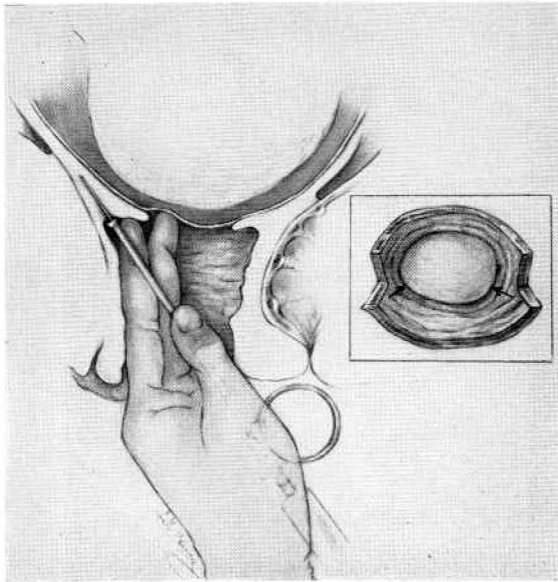


Fig. 1. Paracervical block, showing placement of the anesthetic.

along channels accompanying the uterine circulation. Thence their pathways lead into the uterine, pelvic and hypogastric plexuses and eventually to the spinal cord via the sympathetic chain to the rami of the eleventh and twelfth thoracic nerves.

These pathways can be interrupted at various levels by several well known techniques such as spinal, caudal or paravertebral anesthesia. We have found, however, that several circumstances provide ideal opportunities to accomplish the same degree of pain relief by the application of the safer, simpler and more easily established paracervical block.

The equipment required to effect the block consists of: (1) a 10 cc. syringe, (2) a 5 inch 21 gauge needle, (3) a suitable needle guide, (4) a basin and bulb syringe for solution used to irrigate the vagina prior to beginning the block, and (5) a cup to contain the anesthetic solution.

Several needle guides are available (Kobak and Iowa trumpet types), and others have been improvised (plastic tubing cut to desired length or large-gauge needles with the bevel cut off and used backwards as a channel to guide the smaller needle attached to the syringe). Our preference has been for the trumpet type modified by bending the distal 2 inches in a gentle curve (the needle should be in the guide when it is bent). An arc of some 30 degrees facilitates placement of the guide, particularly when used in obstetrical situations with the presenting part at a level lower than the ischial spines.

Various anesthetic agents have been used. In our experience, a 1 per

cent solution of lidocaine (Xylocaine) has proved satisfactory. Its one disadvantage seems to be the short duration of the anesthesia produced (45 to 90 minutes) although this may be due in part to the rapid absorption from the tissues into which the injections are made. In any case an agent or vehicle which would allow for longer periods of anesthesia without reinjection would be helpful.

After suitable preparation and draping of the patient in the dorso-lithotomy position, the vagina is rinsed with a dilute solution of benzalkonium (Zephiran), care being taken to cleanse the lateral fornices by using a bulb syringe. The 10 cc. syringe is then loaded and the needle attached. The guide is then placed so that its distal tip lies in the uterovaginal fold of mucosa just posterior and lateral to the cervix at approximately four or eight o'clock. One hand steadies the guide in this position while the other inserts the 21 gauge needle with syringe attached (Fig. 1). Ten cubic centimeters of solution is injected on either side in this manner. This approximate placement of the anesthetic is satisfactory in obstetrical situations, while a more deliberate attempt to inject the uterosacral ligaments is desirable in gynecologic procedures.

RANGE OF USAGE

Obstetrical usefulness has been described in detail in a previous communication. Perhaps the most dramatic application of this technique is demonstrated when it is used for the multiparous patient in active labor and the cervix 4 to 5 cm. dilated. In well over 80 per cent of cases, complete pain relief is afforded for the remainder of the first stage of labor. When combined with pudendal block, instituted with the same equipment using the transvaginal approach, ideal anesthesia is produced. With the help of this combination which facilitates cervical dilatation and relaxes the perineum, the majority of these patients will progress rapidly to safe, spontaneous delivery without the need of supplementary anesthesia.

Multiparous patients with histories of previous rapid labors and deliveries, for whom induction of labor is planned, are also excellent candidates for paracervical block anesthesia. Such a patient with an extremely favorable cervix may have the block placed at the same time the membranes are ruptured and the infusion of dilute oxytocin started. The need for additional analgesia for the first stage is rarely encountered.

In primiparas, the use of paracervical block offers distinct advantages in two areas: (1) Frequently one may diminish the amount of analgesics used in the latter part of the first stage by taking advantage of the pain relief afforded to the patient by this technique, and (2) most importantly in our experience, its use when confronted with "cervical dystocia" will

in many cases allow for vaginal delivery rather than the contemplated cesarean section.

The emergency curettage necessitated by excessive bleeding complicating incomplete abortion must frequently be done on patients who are poor candidates for general anesthesia. This situation is easily and successfully managed by utilizing the pudendal and paracervical block combination.

Gynecological procedures which provide opportunities to apply this method of anesthesia are: (1) diagnostic dilatation and curettage of the uterus, (2) endometrial biopsy, (3) uterosalpingography, and (4) a therapeutic test for primary dysmenorrhea.

Diagnostic dilatation and curettage is still a hospital procedure in most areas. The expense involved can be materially reduced by performing the operation under paracervical and pudendal block anesthesia. The patient can be discharged after a few hours in the hospital with considerably less disability. Endometrial biopsy becomes a comfortable office procedure under this simple type of anesthesia. The occasional patient in whom unusually severe cervical pain prevents the performance of uterosalpingography is greatly benefited by paracervical block. This anesthetic is also of assistance in the selection of patients being considered for definitive surgical procedures to combat severe primary dysmenorrhea. Injection of the uterosacral ligaments at the height of the menstrual discomfort will indicate, with a high degree of accuracy, the patients in whom presacral neurectomy and/or transection of uterosacral ligaments will be successful.

Possible complications include fetal bradycardia in obstetrical usage, toxic reaction to total dosage of the agent employed, sensitivity reactions to the agent, intravascular injection and/or hematoma, and infection.

Approximately 20 per cent of blocks in obstetrical cases are associated with some degree of fetal bradycardia. For this reason we avoid the use of vasopressors in the anesthetic solution. Epinephrine has been shown to exert a selective effect on the musculature of uterine vessels. The administration of oxygen and turning the patient on her side has regularly been associated with a rapid return to normal of the fetal heart rate. The safe range of total milligram dosage for each agent should be carefully observed. Patients with histories of reactions to "caine" agents should be tested prior to using paracervical block. We know of one case of parametrial hematoma but no cases of infection in several hundred cases of this type of anesthesia.

Advantages and Disadvantages (Possible Complications)

The advantages of paracervical block anesthesia are those of simplicity, safety and versatility. The latter asset is easily demonstrated

by the wide ranges of application discussed above. As a variety of local anesthesia, it enjoys the high safety levels commonly associated with this type of anesthesia in other areas. The block is easily and simply performed by the obstetrician-gynecologist, with a minimum of equipment and at the time and place of his choice. The immediate availability of a trained anesthesiologist is not a matter of concern, as it might be with spinal, caudal or paravertebral blocks.

Conclusion

Paracervical block is a simple, safe, and widely useful procedure which those practicing obstetrics and gynecology should be acquainted with and use when indicated.

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