When it comes to physiology, "common sense" and "conventional wisdom" may not be

To the Editors: I thank Goldkrand and Jackson (Goldkrand JW, Jackson MJ. Blood pressure measurement in pregnant women in the left lateral recumbent position. Am J Obstet Gynecol 1997;176:642-3) for presenting information which should be, but has not been, obvious to physicians and nurses who care for pregnant women. I have fought the battle with rare success for >20 years.

Obstetricians seem to be the one group that will change a variable (alter position) to achieve a desired result. Measuring blood pressure by either direct or indirect methods in the upper extremity of a patient in the lateral decubitus position is equivalent to raising a transducer above the level of the aortic bulb in a catheterized vascular tree. The practitioner simply raises the transducer until happy, albeit incorrect.

The error of this logic should be apparent to any student of freshman physiology or physics. The components of blood pressure are cardiac output and systemic vascular resistence. Other than those women with supine hypotension syndrome in pregnancy, alterations of position change neither cardiac output nor systemic vascular resistance. To be sure, in the excepted group, the cardiac output and blood pressure go up, not down.

The measurement of blood pressure must be compensated by the height of the hydrostatic column of blood relative to the aortic bulb (millimeters/13, mercury being 13 times the weight of water or blood). I tell students and residents that this is why we take all those "irrelevant courses" in undergraduate school and the preclinical years. Perhaps admissions committees should require mathematic or philosophic logic also.

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6/8/84094

Reply

To the Editors: We want to thank Artman for the kind comments regarding our study. Our endeavor was to evaluate the obstetrician's time-honored practice of placing pregnant women on the left side when they have elevated blood pressure and then retaking the blood pressure after a brief rest. We believe that we now realize what the real effect of this practice can yield, and the true blood pressure can be determined accurately on the left side. With this information, the obstetrician can now make the proper clinical decision in patient management.

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Action of intrauterine contraceptive devices

To the Editors: The commentary by Spinnato (Spinnato JA II. Mechanism of action of intrauterine contraceptive devices and its relation to informed consent. Am J Obstet Gynecol 1997;176:503-6) is a selective literature review that he uses to conclude that the scientific evidence published to date is insufficient to indicate that the main mechanism of action of the copper intrauterine contraceptive device (IUD) is achieved by a spermicidal effect that prevents fertilization of the ovum. Spinnato then states that if a woman is considering this method of contraception she should be informed that there is a strong probability that the main mechanism of action of the IUD is inhibition of uterine implantation of the conceptus. This conclusion differs from the literature review conducted by several other respected groups (World Health Organization in 1987, Sivin in 1991, and Croxatto et al. in 1994), who each independently concluded that the main mechanism of action of copper IUDs was not prevention of implantation of the fertilized ovum into the uterine lining. Although the author quotes the study of Tredway et al. involving only four subjects wearing IUDs who had an absence of sperm in the oviducts, he neglects to mention the study of El Habashi et al.[1] who found no sperm in the oviducts of 30 IUD users after midcycle coitus in contrast to sperm being found in the oviducts of 14 of 30 controls. The author also fails to cite the findings of three other studies that demonstrated that copper has a direct deleterious effect on sperm motility and penetration into midcycle cervical mucus in contrast to what occurs with other metals.

Indirect evidence indicating that the primary action of the copper IUD action is prevention of fertilization is provided by the 7-year World Health Organization study of copper IUD users, which reported that with increasing duration of use the intrauterine pregnancy rate gradually increased whereas the ectopic pregnancy rate remained low and constant.[2] If the copper IUD does not prevent fertilization but acts primarily by preventing uterine implantation, the tubal pregnancy rate should also increase with time.

Thus the conclusions reached by the author regarding copper IUDs are not supported by reviewing all the published data that addressed the mechanism of action of IUDs instead of the selected studies quoted in the article.

Although the progesterone-releasing IUD may act mainly by inhibition of implantation, the copper IUD mainly acts as a spermicide preventing fertilization. Because the majority of IUDs used in the United States and Europe are copper bearing, it is necessary to differentiate the mechanism of action of these two types of IUDs.

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2. World Health Organization. The TCu380A, TCu220C, Multiload 250 and Nova T IUDs at 3, 5 and 7 years of use: results from 3 randomized multicentre trials. Contraception 1990; 42:141-58.

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Reply

To the Editors: Mishell misquotes me in each of his first two sentences. In my article, I did not speculate as to which of the two general mechanisms of action of IUDs, prevention or fertilization versus prevention of implantation, was the "main" mechanism. This question has not been directly or conclusively addressed in the literature. What I did conclude is that inhibition of implantation remains a major mechanism of action of IUDs. Whether the relative proportion of importance of the two mechanisms is 60:40, 50:50, 40:60 or some other proportion, and whether that proportion changes with time, is unknown.

As have others, Mishell has chosen to ignore the evidence I present. The disproportionate protection against intrauterine versus ectopic pregnancy noted in several clinical trails of IUDs, the studies of ectopic pregnancy among IUD users, and the virtual 100% effectiveness of the IUD when used as an emergency contraceptive compel the conclusions I reached.

Mishell misses the point. In two of his publications,[1,2] when addressing the mechanism of action of IUDs, he states it to be exclusively spermicidal with no mention of a postfertilization mechanism. I believe these publications to be erroneous on this point and therefore might mislead both the providers and recipients of IUDs.

I am more than willing to concede to Mishell that the spermicidal effect of IUDs might be the "main" mechanism of action. (All this requires is that its proportion of action exceeds 50%.) However, the available evidence requires Mishell to concede a major postfertilization mechanism as well and adjust his future publications to reflect this change. How about it, sir?

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2. Mishell DR. Intrauterine devices. Fertil Control Rev 1992;3: 3-12.

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Povidone-iodine and abdominal hysterectomy

To the Editors: The use of intravaginal povidone-iodine gel as reported by Eason et al. (Eason EL, Sampalis JS, Hemmings R, Joseph L. Povidone-iodine gel vaginal antisepsis for abdominal hysterectomy. Am J Obstet Gynecol 1997;176:1011-6) demonstrates a useful antiinfective technique. We have been using a somewhat similar but easier technique for the past 26 years. In our procedures we complete a standard abdominal preparation and use a single dose of preoperative cefazolin (2.0 gm) but do not "prep" the vagina. On opening the vagina at the time of hysterectomy, we place a sponge, dripping with povidone-iodine liquid, on top of the cuff and then push the sponge (an opened 4 × 4 gauze) in the vagina, complete the surgery, close the abdomen, and remove the sponge from the vagina before the patient leaves the operating room. Although I do not have comparative statistics, I can state that my own infection rate over this time period is <5%. The only real difference with our procedure is not taking the time to place the patient in the lithotomy position and taking the time to "prep" the vagina.

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6/8/84472

Reply

To the Editors: It is interesting to learn that, although Amstey abandoned the vaginal "prep" long ago, he does value vaginal antisepsis. His novel technique of "immediate postexposure antisepsis" may indeed lower bacterial counts at the appropriate time better than the usual preoperative wash with povidone-iodine solution. I would look forward to seeing more rigorous comparative data on this approach.

Incidentally, we do not use stirrups or the lithotomy position to prepare the vagina. We simply abduct and flex the thighs, keeping the heels resting together on the operating table mattress in the "frog-leg" position.

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