

MIND & MEDICINE

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Emotions and infertility

An interview with Jerome H. Check, M.D.



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Q. Can the menstrual cycle be seriously affected by emotional disturbances?

A. Profoundly affected. Psychological disturbances are the most common cause of menstrual dysfunction. Those serious enough to cause hypothalamic changes can result in irregular cycles, uterine bleeding, or amenorrhea. Mild anxiety—which of course is more frequent—causes no appreciable change in the cycle, but can lead to infertility or habitual abortion because the corpus luteum is inadequately developed. The same emotional factors in their patients may help cause anovulation.

Q. So infertility is frequently caused by emotional problems?

A. Very frequently. Anovulation is usually accompanied by irregular periods or none at all. But an inadequate corpus luteum can exist without there being any noticeable menstrual irregularity. We are all familiar with couples who have been trying to conceive for years without success. They then adopt a child and soon after the wife becomes pregnant. In most such instances, the failure to conceive induced such anxiety in the wife that the delicate sequence of events necessary to allow conception wasn't occurring properly; so ovulation eventually stopped. When her anxiety about being childless ended, ovulation began again.

Q. Is psychotherapy valuable for these people?

A. Yes, and the physician whose first approach is reassurance and support will sometimes help resolve the problems without any need for a fertility-enhancing hormone. I often see couples whose failures to conceive have led each one to blame the other.

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CLINICAL BRIEFS

Therapeutic pets

Advocates of the theory that household pets promote better mental and physical health may be heartened by data presented last November to the American Heart Association.

The finding: Among patients who've been hospitalized for serious coronary heart disease, those who own pets are more likely to survive the first year than those who do not.

The report, presented by Philadelphia biologist Dr. Erika Friedmann, evoked mixed reactions from cardiologists: amusement, serious interest, and conjectures over the validity of the conclusion.

As Dr. Friedmann herself pointed out, the study had been small. It followed up 92 veterans of coronary or medical intensive care units at the University of Maryland Hospital in Baltimore. All had been hospitalized for myocardial infarction or severe angina pectoris; there were 53 pet owners among the 64 men and 28 women.

Within a year after discharge, 14 of the 92 patients had died. But only three of those 14 were pet owners. So the pet owners' *Continued on page 3*

Panic-fear in asthma

At the National Jewish Hospital and Research Center in Denver, Colorado, which specializes in treating severe chronic asthma, they have learned that nearly 29 percent of former patients are rehospitalized for their asthma within the first six months after discharge, and almost 41 percent within the first year.

A group of five researchers at the center, investigating the factors leading to rehospitalization, found that patients whose MMPI evaluation revealed that they had either a high or low "panic-fear" score were twice as likely to be rehospitalized as those whose panic-fear was moderate. The investigators—*Continued on page 6*

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They're greatly relieved when they learn that 28 percent of all couples can't conceive, that their problem is by no means unique to them. Once they calm down and begin talking productively, the wife often becomes pregnant.

You mentioned that anxiety can affect the corpus luteum. How can an inadequate corpus luteum be detected?

Mostly by monitoring temperature. If the basal body temperature is not staying up for 12 days or longer, or takes several days after ovulation to reach peak luteal phase levels, an inadequate corpus luteum must be strongly suspected. You can also find out by examining vaginal hormonal cytology, serum progesterone, urinary pregnanediol, or an endometrial biopsy.

Why is body temperature so significant?

Because it directly reflects the presence, absence or improperly timed secretion of progesterone. After ovulation, significant quantities of progesterone appear for the first time in the cycle. About nine days after ovulation, progesterone causes secretory changes in the endometrium to prepare it for the implantation of the fertilized egg. Improper secretion of progesterone, which can happen if ovulation takes place before the follicle is sufficiently "ripened," can cause infertility or spontaneous abortion. The lining just isn't properly prepared to implant and nurture a fertilized ovum.

Is a couple's infertility more often caused by the man or the woman?

The woman. Sperm deficiency or some other male defect is possible about 40 percent of the time. When husbands are being exhorted to submit to sperm counts and other tests—which is always desirable—the possibility that they're at fault is often exaggerated. But, after all, nothing is gained by treating the wife if the deficiency is in her husband.

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Do you insist, then, on seeing both husband and wife?

It would be nice to examine every husband, and would certainly improve results, but I can't insist on that. Among clinic patients, in particular, husbands tend to feel that "There's nothing wrong with me," as if questioning their fertility was questioning their virility, and an insult of the worst sort.

The patients I see in private practice tend to have better educations, and few husbands will refuse to be examined. Oddly enough, though, it is often advisable to be certain any couple is usually practicing coitus. As hard as it may be to believe in these days when sex is discussed so openly, there are some couples who simply don't know what to do. Ask them if they are "sleeping together" regularly, and they'll say yes. But further questioning will sometimes reveal that's all they're doing. No coitus is taking place.

Incredible.

But true. There are married couples who need basic sex education.

To get back to emotional causes of infertility. Which are the most common?

A. The many causes of anxiety. Anovulation may follow loss of a loved one, a move to a new environment, fear of pregnancy, worry about a close friend or relative, a job change—you name it. Anxiety is the most common cause of secondary amenorrhea; weight loss—which may also be associated with an emotional disturbance—is a close second. Less obvious sources of anxiety, including failure to conceive in a reasonable time, can also be responsible for infertility.

Q. Just how do the emotions influence ovulatory activity?

A. We're just beginning to learn all the details. We've known for a long time, of course, that the menstrual cycle is controlled by hormones which must interact in a precise way. For many years we thought that the pituitary was the control organ, but we now know that menstruation and ovulation depend on a very exact and delicate relationship between the hypothalamus, pituitary and ovary, and the hypothalamus plays the key role.

Q. In what way?

A. That's where the first hormonal activity takes place. The hypothalamus secretes the gonadotropin-releasing hormone (GnRH) which is necessary for the pituitary to synthesize and release the luteinizing hormone (LH) and the follicle-stimulating hormone (FSH). LH causes the ovary to synthesize estrogen and acts with FSH to promote maturation of the follicle.

Q. And the emotions can upset this process?

A. Exactly. Even a mild dysfunction in the hypothalamic-pituitary-ovarian axis can prevent conception. If there is a bit too little or too much estrogen, ovulation does not occur.

Q. What influences the control of ovulation by the hypothalamus?

A. The hypothalamus is not the highest center of control; it reacts to other stimuli—those from the cerebral cortex and limbic system in particular. It's also influenced by biogenic amines from higher centers, and it is through them that emotions alter ovulatory function. The principal CNS amines are dopamine, norepinephrine and serotonin, which influence all hypothalamic-releasing hormones. There is now good evidence that dopamine suppresses LH.

Q. Are other hormones also involved?

A. Yes, with prolactin at the top of the list. Raising the amount of serum prolactin causes a lowering of the amount of gonadotropins, especially FSH; that causes amenorrhea and sometimes galactorrhea. There is good evidence that dopamine helps suppress prolactin, but psychological stress can increase its output; then LH is inhibited and the menstrual cycle is altered. Secretions of adrenals, including ACTH, also seem to be controlled by the hypothalamus, particularly in response to stress. An increase in either cortisol or androgens can inhibit the gonadotropine.

Q. You mentioned weight loss as a cause of secondary amenorrhea. That's dramatically evidenced in women with anorexia nervosa.

A. Yes. They develop amenorrhea along with dry skin, constipation, abdominal pain, and intolerance to cold. Most of the symptoms seem to be related to the weight loss itself, although some may be due to thyroid dysfunctions. Another at least equally dramatic demonstration of the psyche's effect on menstrual func-

tion is pseudocyesis. The woman who believes she's pregnant develops an enlarged abdomen and breasts, darkening of the areolae and even galactorrhea. Most of these patients have an elevated prolactin level, which explains the milk flow; their supply of LH, FSH, urinary estrogens and pregnanediol are all lower than normal.

Q. How does one differentiate between menstrual dysfunctions of psychic origin and organic diseases?

A. The organic conditions usually are identifiable by such symptoms as severe hemorrhage, hirsutism, weight loss, and so on. In most cases of psychological disturbances, only ovulation is affected, and the ovary continues to produce estrogen which allows the endometrial lining to build up. If such a patient reacts to progesterone by withdrawal bleeding, if the vaginal hormonal cytology is normal, and if she has recently undergone some stress, such as a change in environment, no further work-up is usually necessary.

Q. Does resolving the emotional problem always resolve the physical one?

A. No, not always. The longer ovulation is interfered with, the longer anovulation tends to persist after the psychological problem has been resolved. Two patients, Mary and Sue, both stopped ovulating shortly after coming to Philadelphia to study nursing. They happened to be from the same Midwest city. Mary adjusted promptly and her periods became regular again, but Sue got worse. She developed pimples and increased facial hair growth. By the time her emotional stress was relieved she had developed a polycystic ovary. However, even patients like Sue are benefited by relief from psychological torments.

Q. Are psychotropic drugs valuable for these patients?

A. When there's anxiety or agitation, a minor tranquilizer can sometimes be helpful. The more potent ones are contraindicated because they tend to interfere with the biogenic amines which influence the hypothalamus. I prefer not to use the tranquilizers whenever possible, but for some patients the minor ones are needed and very helpful. But, if a woman wants to become pregnant, the antidepressant drugs should not be used at all. They interfere with the biogenic amines so markedly that when antidepressants are given not even fertility-inducing drugs are effective.

Q. Suppose a woman taking a psychic energizer to combat depression wants to become pregnant?

A. You reduce the dose of the psychic energizer, or discontinue it altogether, until the woman has become pregnant and the ovum is well planted. Those who become pregnant while off the drug often become so pleased with themselves that they don't start it again. Yet I've found myself more than once pleading with a psychiatrist to interrupt an antidepressant medication long enough to allow ovulation to occur. I'm not, of course, talking about victims of a really deep depression. They don't seek pregnancy.

Q. What about the agitated patient? Does her agitation end when she becomes pregnant?

A. Yes, usually. But there are some exceptions. You occasionally run into the patient who has been trying to become pregnant for so long that when she does she immediately begins worrying about having a miscarriage. And, of course, that very worry tends to make miscarriage more likely by reducing the production of the progesterone needed for adequate implantation and retention.

Q. How do you manage that type of patient?

A. You provide reassurance and prescribe whatever supplemental progesterone that's needed. I tend to watch these patients during the entire first trimester. They seldom have any problems after that, and their subsequent pregnancies are uneventful—they now have confidence.

Q. Does mental or emotional stress ever cause other menstrual dysfunctions?

A. Yes, several. Depression can be accompanied by dysfunctional uterine bleeding that is extremely resistant to hormonal therapy, whether or not antidepressant drugs are taken. An occasional patient will have an ample supply of estrogen, but very little endometrial tissue. For some yet to be explained reason, this type of amenorrhea—which can be very resistant to even high doses of estrogen and progesterone—often happens after an automobile accident. We've also seen several women who, shortly after their husbands died, developed amenorrhea, hot flashes, and other symptoms of menopause, including elevated gonadotropin levels. But when these women began dating again, their symptoms abated and their menstrual function returned to normal. So the psyche appears to have a direct influence on the ovary. ■

PETS Continued from page 1

survival rate was 94.3 percent compared to a rate of 71.8 percent for those who did not own pets.

Just an interesting coincidence? Perhaps, said Dr. Friedmann, but the data had come from a much larger study on factors influencing morbidity and mortality in patients with heart disease.

The question of pet ownership got into the study only because isolation and lack of companionship had been previously shown to increase the likelihood of developing heart disease. Wondering whether isolation also affected survival after serious attacks, the researchers chose pet ownership as indicating one kind of companionship.

Greatest influence

To their surprise, pets proved to have a greater influence, in their small series of patients, than any other factor—including the severity of the heart disease, which ranked second.

Assuming that the necessity to walk dogs added a different variable, they subtracted the 43 dog owners from their group. But the 10 owners of other pets—cats, birds, gerbils and even iguanas—had also done well; all were still living.

After emphasizing that a more extensive population must be analyzed before significant conclusions can be drawn, Dr. Friedmann said:

"This study provides a confirmation and extension of previous findings by Dr. James Lynch and associates at the University of Maryland that social affiliation and companionship have important effects on health. It suggests that pet ownership may be an important source of companionship with positive health benefits."

The benefit is potentially greater in mental health than in physical, in the view of Dr. Boris M. Levinson, Professor Emeritus at Yeshiva University's Ferkauf Graduate School of Humanities and Social Sciences, who has long urged careful clinical studies to evaluate the psychological and social interactions between man and his animal companions.

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