

DIAGNOSTIC CRITERIA FOR BACTERIAL VAGINOSIS

To the Editor:

The study of Reed et al (Reed BD, Huck W, Zazove P: *Differentiation of Gardnerella vaginalis*, *Candida albicans*, and *Trichomonas vaginalis* infections of the vagina. *J Fam Pract* 1989;28:673-680), which attempts to differentiate three different types of vaginal infections, uses *Gardnerella vaginalis* cultures as a marker of bacterial vaginosis (BV). Unfortunately, this use of *G vaginalis* culture as a marker for BV only serves to perpetuate the historical confusion surrounding the etiology of BV and probably accounts for why the investigators did not find the associations or risk factors regarding BV that other investigators have found.

In a recent review of the literature on bacterial vaginosis, Weaver and Mengel noted that when Gardner initially characterized BV, he could not satisfy all four of Koch's postulates with *G vaginalis* alone.¹ Subsequent investigators have confirmed that *G vaginalis* occurs in 40% to 50% of asymptomatic women who have no clinical signs of BV.² Finally, Amsel et al,³ in a study performed on 397 women presenting to a student health gynecology clinic, showed that a positive *G vaginalis* culture only has a 39% positive predictive value for BV. Thus, as Reed et al pointed out in their own paper, a factor may have an impressive association with the disease, as *G vaginalis* has with BV, but have poor predictive value. Such a misclassification error will only serve to decrease the chances of finding significant associations between BV and its risk factors.⁴

Unfortunately, the authors also discount the value of the Gram stain smear in diagnosing BV. They state that the value of this test for the clinical diagnosis of BV still needs to be addressed. Recently, Eschenbach et al,⁵ in an investigation of 640 randomly selected women attending a sexually transmitted disease clinic,

addressed the utility of the Gram stain smear in diagnosing BV. Those investigators found that the Gram stain smear correlated better than results of semi-quantitative cultures for *G vaginalis* with the presence or absence of clue cells and with composite clinical criteria. In the first study utilizing the Gram stain smear in the diagnosis of BV, Spiegel et al⁶ determined that the sensitivity and specificity of the Gram stain smear in diagnosing BV in their sample was 100% for both properties. Although the study by Spiegel et al was small, it does indicate that the Gram stain smear has excellent sensitivity and specificity for diagnosing BV. Thus, contrary to the belief of Reed et al, the Gram stain smear is emerging as the best diagnostic test for BV.

Because the etiology of BV appears to involve multiple organisms, not just *G vaginalis*, the study by Reed et al only adds to the historical confusion surrounding the etiology of BV. The use of *G vaginalis* cultures, even when a better test—the Gram stain smear—for the diagnosis of BV has been described and evaluated, probably resulted in a large misclassification error, reducing the investigators' chances of finding significant associations. Clearly, future studies of this topic should not utilize *G vaginalis* cultures as a marker for BV but should use the Gram stain smear as the best currently available method of making the diagnosis of bacterial vaginosis.

Mark B. Mengel, MD, MPH
Department of Family Medicine
University of Oklahoma
College of Medicine
Oklahoma City

References

1. Weaver CH, Mengel MB: Bacterial vaginosis. *J Fam Pract* 1988;27:207-215
2. Vontver LA, Eschenbach DA. The role of *Gardnerella vaginalis* in nonspecific vaginitis. *Clin Obstet Gynecol* 1981;24:439-460
3. Amsel R, Totten PA, Spiegel CA, et al: Non-specific vaginitis: Diagnostic criteria and

microbiologic and epidemiologic associates. *Am J Med* 1983;74:14-22

4. Fleiss JL: *Statistical Methods for Rates and Proportions*, ed 2. New York, John Wiley & Sons, 1981
5. Eschenbach DA, Hillier S, Critchlow C, et al: Diagnosis and clinical manifestations of bacterial vaginosis. *Am J Obstet Gynecol* 1988;158:819-828
6. Spiegel CA, Amsel R, Holmes KK: Diagnosis of bacterial vaginosis by direct gram stain of vaginal fluid. *J Clin Microbiol* 1983;18:170-177

The preceding letter was referred to Dr Reed, who responds as follows:

The comments by Dr Mengel directly address the heart of the dilemma regarding the entity known as bacterial vaginosis. What criterion should be used for its identification in current research? Is the use of *Gardnerella* cultures worthless in the identification of patients with bacterial vaginosis? Would the Gram stain better identify the population sought? While the search continues for the ideal criterion, I propose that because of the limitations of our current level of knowledge about bacterial vaginosis, no single criterion can be used to the exclusion of others at this time.

Various diagnostic criteria have been proposed and used for identifying patients with bacterial vaginosis. These include the use of *Gardnerella vaginalis* cultures, presence of symptoms (such as change in vaginal discharge or vaginal odor), and clinical criteria, singly or in combination (presence of clue cells, elevated pH of the vaginal discharge, amine odor on application of KOH, homogenous discharge, Gram stain, and presence of organic acids). Identifying the best criterion to use for the identification of this vaginosis depends on the goal sought. If one criterion better predicts the population to address for prevention of complications, relief of symptoms, or relief of clinical signs, this criterion may be preferable. Unfortunately, it is not yet clear which criterion best predicts the appropriate population to study for achievement of these goals.

Complications have been associ-

ated with the presence of the *Gardnerella* organism as well as with the clinical entity of bacterial vaginosis as defined by clinical criteria or Gram stain. Studies have documented an increased risk of preterm labor,¹ postpartum endometritis,² liver abscess,³ and upper and lower urinary tract infections⁴ in patients with positive *Gardnerella* cultures. In these studies the *Gardnerella* organism has been isolated from the site of infection. Other studies have found low birthweight, preterm rupture of membranes, preterm labor, and amniotic fluid infection in patients who met the clinical diagnosis of bacterial vaginosis.⁵ Both the positive *G vaginalis* culture (including cultures from the chorioamnion) and the clinical diagnosis of bacterial vaginosis were associated with chorioamnionitis and preterm delivery,⁶ and preterm labor was associated with the diagnosis made by Gram stain.⁷ Clearly, the best criteria to use to identify those at risk for complications are unclear.

If the relief of symptoms is the goal desired, neither the clinical criteria proposed by Amsel⁸ nor the identification of the *Gardnerella* organism is highly predictive—approximately one half of the patients will be asymptomatic using either criteria. Furthermore, disparities are found between relief of symptoms and eradication of the *Gardnerella* organism or elimination of the clinical criteria for diagnosis. Asymptomatic infection occurs frequently in many infections, however (such as that of group A β -hemolytic streptococcal infections), and is not a strong argument for abandonment of the criteria. Whether treatment is beneficial for asymptomatic patients with *G vaginalis* present or for those who meet the clinical criteria for bacterial vaginosis is not known. Identification of the symptomatic status of patients in future studies is still needed to determine whether the symptoms are predictive of complications or response to treatment.

As Dr Mengel states, the use of the Gram stain is a better predictor of bacterial vaginosis as defined by the clinical criteria suggested by Amsel⁸ than is the *Gardnerella* culture.^{9,10}

However, a strong association is seen between the Gram stain and the *Gardnerella* cultures—as would be expected in light of the close association between the Amsel criteria and *G vaginalis* cultures.¹⁰ Furthermore, it is not yet clear whether the Gram stain or the Amsel clinical criteria that it predicts best identify the subpopulation at risk for complications, or that they are correlated with symptoms any better than are those identified by the presence of *G vaginalis*. They may instead be identifying a mixed bag of vaginoses with differing etiologies and complication rates.

Further study is obviously needed regarding the entity(ies) currently known as bacterial vaginosis. Until clear evidence indicates which criteria or organisms are associated with complications of bacterial vaginosis and response to treatment, use of the clinical diagnosis criteria exclusively (Amsel criteria or Gram stain) may result in tunnel vision. To avoid missing important potential associations, research on bacterial vaginosis must continue to provide detailed information about the microbiological flora present as well as the clinical criteria met and the Gram stain results, and the associations between these factors and the outcome measure desired (complications, symptoms, signs, etc) must be clearly identified.

Barbara D. Reed, MD, MSPH
University of Utah Medical Center
Salt Lake City

References

- Morales WJ, Angel J., O'Brien WF, et al: A randomized study of antibiotic therapy in idiopathic preterm labor. *Obstet Gynecol* 1988;72:829-833
- Watts DH, Eschenbach DA, Kenny GE: Early postpartum endometritis: The role of bacteria, genital mycoplasmas, and *Chlamydia trachomatis*. *Obstet Gynecol* 1989;73:52-59
- Ezzell JH, Wickliffe JM Jr: *Gardnerella vaginalis*: An unusual case of pyogenic liver abscess. *Am J Gastroenterol* 1988; 83:1409-1411
- Josephson S, Thomason J, Sturino K, et al: *Gardnerella vaginalis* in the urinary tract: Incidence and significance in a hospital population. *Obstet Gynecol* 1988;71: 245-250
- Gravett MG, Nelson HP, DeRouen T, et al: Independent associations of bacterial

vaginosis and *Chlamydia trachomatis* infection with adverse pregnancy outcome. *JAMA* 1986;256:1899-1903

- Hillier SL, Martius J, Krohn M, et al: A case-control study of chorioamnionitis in prematurity. *N Engl J Med* 1988;319: 972-978
- Martius J, Krohn MA, Hillier SL, et al: Relationships of vaginal *Lactobacillus* species, cervical *Chlamydia trachomatis*, and bacterial vaginosis to preterm birth. *Obstet Gynecol* 1988;71:89-95
- Amsel R, Totten PA, Spiegel CA, et al: Nonspecific vaginitis: Diagnostic criteria and microbial and epidemiologic associations. *Am J Med* 1983;74:14-22
- Eschenbach DA, Hillier S, Critchlow C, et al: Diagnosis and clinical manifestations of bacterial vaginosis. *Am J Obstet Gynecol* 1988;158:819-828
- Spiegel CA, Amsel R, Holmes KK: Diagnosis of bacterial vaginosis by direct Gram stain of vaginal fluid. *J Clin Microbiol* 1983;18:170-177

FORCEPS DELIVERY

To the Editor:

The article "Workshop for Teaching Fundamentals of Obstetric Forceps" by Dr. Eggertsen (*J Fam Pract* 1989; 28:313-314) was timely and informative. On reviewing the procedural steps for low forceps, I was reminded of an acronym that has remained with me for 10 years of doing forceps deliveries—ABCDEFGHIJ:

- Anesthesia adequate?
- Bladder empty?
- Cervix dilated?
- Determine position absolutely
- Equipment ready for episiotomy and forceps
- Forceps ready?
 - Left hand grasps left handle and goes on left side of mother
 - Right hand grasps right handle and goes on right side of mother
 - Check position of forceps
- Gentle traction
- Handle: elevate to follow curve of pelvis
- Incision for episiotomy
- Remove forceps when jaw is reachable

John W. Bachman, MD
Department of Family Medicine
Mayo Clinic and Mayo Foundation
Rochester, Minnesota

OBSTETRICS IN FAMILY PRACTICE

To the Editor:

I would like to respond to the letter by Dr Ruane in the July 1989 of the *Journal* (Ruane TJ: *Obstetrics in family practice, letter. J Fam Pract 1989;29:16*).

Dr Ruane seems to suggest that the discipline of family practice should jettison obstetrics. His reasoning is that since family physicians in the private sector have been giving up obstetrics at an alarming rate, the academic sector should and must follow suit. He gives many reasons why this would be advisable.

It is my opinion that our academic family physicians are really pursuing the right course. Family practice and general practice have always encompassed obstetrics, and it has only been the peculiar contemporary medical climate that has been destructive to obstetrical practice not only by family physicians but also by obstetricians. Most physicians agree that we are practicing in a milieu of social madness and the insanity cannot continue too much longer. Academic family medicine is preserving an important part of family practice for the future. If we lose maternity cases, we might lose our total identity as a separate discipline. There would be little to separate us from internal medicine.

Family medicine has been struggling for years to get a firm academic base, a base that will be determined mainly by our progress in research. After a 20-year struggle we are finally beginning to see the results of the sacrifices and battles of the family practice department chairmen in our medical schools. Some of the best research seems to be occurring in obstetrics. I was extremely happy to see the research work of two family physicians, Yawn and Yawn¹, in the July 14, 1989 issue of the *Journal of the American Medical Association* entitled "Preterm Birth Prevention in a Rural Practice." The work merited a rather detailed editorial in the same issue of *JAMA*.

There are still frontiers to be crossed in obstetrics. We still need to

know the cause of the killer eclampsia. Wouldn't it be ironic if a researcher in family medicine was the discoverer?

George W. Merkle, MD
Carlsbad, California

Reference

1. Yawn BP, Yawn RA: Preterm birth prevention in a rural practice. *JAMA* 1989;262: 230-233

The preceding letter was referred to Dr Ruane, who responds as follows:

Like religion, abortion, and the Reagan administration, the topic of obstetrics in family practice seems to resist reasoned analysis. Family practice should certainly not jettison obstetrics. Yet the promise of our specialty to that practice remains unrealized.

I made two observations, the analyses of which seem important to our field. The first is that the decline in numbers of students selecting family practice is alarming and threatens the viability of family practice of any sort. The second is that, for the most part, only part-time physicians with institutional money and manpower support (ie, faculty) are continuing to practice obstetrics. I am concerned that the model of family practice which faculty portray may further diminish the interest of students in our specialty. There is ample challenge and reward in family practice, whether obstetrics is included or not. We are, far and away, the specialty best equipped and most dispositionally suited to provide primary care. We should recognize and promote the various styles of practice that provide continuing and comprehensive health care for our patients. The realities of full-time practice cannot be ignored with impunity by educators.

Adequate prenatal care undoubtedly has a greater impact on morbidity and mortality than the vast majority of what we do in the office or hospital, and such care is becoming increasingly difficult to find. The tra-

ditional model of one-to-one prenatal and obstetric care is desired by patients and provides great satisfaction to the physicians who choose to practice in this way. It is financially relatively lucrative but enormously costly in terms of the unanticipated demands of many sorts that it places on physicians and practices.

If family practice wishes to continue and increase its impact on obstetric services, development of models of care that prove tenable in the real world should occur in parallel with the fighting of administrative and financial battles. Such an approach might prove more effective in the long run than continuing to "preach to the converted."

Thomas J. Ruane, MD
Michigan State University
East Lansing

To the Editor:

I am responding to the recent letter by Dr Thomas Ruane (*Obstetrics in family practice, J Fam Pract 1989;29:16*). His letter was very vague, but the central theme seemed to be that academic centers for family practice should stop teaching obstetrics and that our profession should stop researching and publishing in that area as well. Very few suggestions could be any more misguided. Ruane's own observations can be used to justify our continued involvement in obstetrics.

The central problem that Ruane has identified is that fewer family physicians are doing obstetrics these days. He even tells us why. The reasons are monetary, medicolegal, and lifestyle. Do these have any bearing on a family physician's capabilities? Certainly not. Did those who quit obstetrics do so because they thought delivering babies was outside the definition of what a family physician should be doing? Definitely not!

The most important issue here is to define what is within the reasonable realm and capability of the family physician. Most family physicians I know believe that obstetrics is within the realm of our specialty (even if they choose, individually, not to deliver ba-

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bies). If we do not broadly define our own specialty, it will be narrowly defined for us. If we redefine it too narrowly based upon ever-changing legal and fiscal problems, then we will unnecessarily (and unfortunately) be depriving succeeding generations of colleagues of some very enjoyable, profitable, and fulfilling opportunities.

Ruane has presented no logic or data that support redefining family practice without obstetrics. His letter is, however, full of ominous-sounding questions regarding the future of our specialty. I submit that Ruane's crystal ball is too cloudy, and that the scope of family practice in the future is just as likely to be expanded as it is to be restricted.

Some family physicians may look at the complexity and rapid change of our practice climate and decide to retreat to doing only outpatient geriatrics. That is definitely fine with me. Others of us (myself included) will devise new ways to deal with the problems of today while we continue to practice (and even expand) the scope of medicine that we enjoy. All we would ask of our colleagues is, please don't put any roadblocks in our path. There are enough other specialists out there doing that.

I would like to thank the Journal and those family physicians reporting obstetric research in it. As a recent family practice residency graduate (1987) who practices obstetrics, I find this literature extremely useful in dealing with obstetrics-gynecology committee members who feel I ought not to be doing that for which I was well trained, namely, taking care of whole families, including expectant parents and laboring mothers.

Thomas Brysacz, MD
Phoenix, Arizona

To the Editor:

The recent letter by Dr Thomas Ruane of the Michigan State University Department of Family Practice (*Obstetrics in family practice. J Fam Pract 1989;29:16*) summarizes many of the important pragmatic difficul-

ties in practicing obstetrics in a community-based family practice. In short, he indicates the reasons as follows: malpractice, lifestyle issues, cost issues, and the increasing complexity of medicine and overhead issues.

Fortunately and unfortunately, these issues impact essentially all procedures in medicine and all specialties.

Indeed, Ruane makes the statement "something has to give as the complexity and intensity of outpatient medicine increases. For the majority, obstetrics has been discontinued. Increasingly, hospital practice will follow."

I sincerely hope Ruane's predictions do not become reality. I have practiced rural family practice in both North Carolina and Pennsylvania despite the fact that each of these practices has been located within an hour of a major metropolitan center. Rural family practice encompasses many aspects of practice, including procedural medicine, occupational medicine, and intensive care hospital medicine. I am both proud and stimulated to be involved in such a practice and can earnestly state that this prevents me from ever falling into the rut of day-to-day family practice.

I am extremely grateful that my residency training exposed me to the varieties of procedural medicine, including obstetrics. I strongly believe that all academic situations, including residencies, should continue to expose residents to as many procedures as possible, including obstetrics, so that graduating (soon to be board certified) family physicians can make knowledgeable decisions about practice styles in their careers. Indeed, if people are not exposed to procedural medicine, they will never have the opportunity to decide whether they want to continue or even begin such practices in their later professional careers. I would prefer to overhear a third-year resident say, "No, I do not want to do obstetrics in my practice," rather than "I can't do obstetrics in my practice because I don't know how."

Edward G. Zurad, MD
Tunkhannock, Pennsylvania

ETHICS OF GATEKEEPER ROLE

To the Editor:

The Controversies exchange on the ethics of the family physician as gatekeeper¹ suggests one basic ethical statement that would be agreed to by both sides in the controversy. Even though it remains unclear whether adequate patient disclosure entirely resolves the ethical conflict within the gatekeeper role, it would still appear that disclosure is a *necessary* ethical condition if gatekeeping is to be permissible at all.²

This suggests the following position statement, which I offer for the consideration of family physicians and their organizational representatives:

It is unethical for a family physician to contract with, or remain in the employment of, a prepaid or capitation health care plan that opposes or discourages frank discussion and full disclosure of the incentives and financial management of the plan between physician and patient.

Ideally, of course, the family physician would go beyond this minimum requirement and take active steps to inform and educate patients as to the nature of the plan and how it may impact on their care; but the precise extent and timing of such disclosure may defy formal codification. On the other hand, any plan that pressures physicians not to disclose such issues would seem on its face to be so inimical to the values of good primary care that no family physician could ethically associate with it.

Howard Brody, MD, PhD
Michigan State University
East Lansing

References

1. Can the family physician avoid conflict of interest in the gatekeeper role? Ellsbury KE: An affirmative view. Stephens GG: An opposing view. *J Fam Pract* 1989;28:698-704
2. Levinson DF: Toward full disclosure of referral restrictions and financial incentives by prepaid health plans. *N Engl J Med* 1987; 317:1729-1731