

## A Retrospective Review of Performance and Utility of Routine Clinical Pelvimetry

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**Background and Objectives:** *Some authorities have questioned the utility of performing clinical pelvimetry as part of routine prenatal care. This study determined the frequency with which clinical pelvimetry is still performed at two military hospitals and whether the results of pelvimetry influence the management of labor and delivery.* **Methods:** *We conducted a retrospective review of prenatal records at two military hospitals. One was an overseas hospital, and one was a family medicine teaching hospital in the United States. The records of 660 pregnant women were reviewed to identify documentation that pelvimetry was performed during prenatal care and whether there was evidence that the physician managing labor and delivery altered management based on pelvimetry results.* **Results:** *Seventy percent (461) of the 660 records reviewed had all pelvimetry measurements documented as normal, or the provider had written "good for TOL (trial of labor)," "proven to XX pounds," or similar annotation that pelvimetry was normal. Nine percent (58 records) had no documentation of pelvimetry (pelvimetry section left blank). The remaining 21% (141 charts) had at least one pelvimetry measurement listed as abnormal on the initial prenatal exam. No admission note, progress note, or operative note recorded during labor and delivery made reference to clinical pelvimetry results. No abnormal pelvimetry result was referenced in follow-up visits or appeared to make any difference in mode of delivery or treatment in labor. Two women (one at each institution) had initial visit notes indicating the need to consider radiographic pelvimetry based on the results of clinical exam, but this test was not done in either case, and both women delivered vaginally.* **Conclusions:** *Our study indicates that clinical pelvimetry does not change management of pregnant patients. Current practice is to allow all women a trial of labor regardless of pelvimetry results. This makes the routine performance and recording of clinical pelvimetry a waste of time, a potential liability, and an unnecessary discomfort for patients.*

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Clinical pelvimetry is the manual examination of the pelvis to determine if it is of adequate size for childbirth. The technique of clinical pelvimetry is described in most obstetrical textbooks<sup>1-3</sup> and taught to medical students and residents despite no evidence of interobserver agreement and poor correlation to radiographic pelvimetry.<sup>4</sup> Additionally, controlled studies have repeatedly shown that X-ray pelvimetry, presumed to be more accurate than manual pelvimetry, is not a successful predictor of vaginal delivery or need for operative delivery.<sup>4</sup> Current clinical opinion expressed in obstetrical textbooks is that, except in very few scenarios, all women should be given a trial of labor.<sup>5</sup> If all women should be given a trial of labor, then the results of pelvimetry would not be expected to alter

labor management. This study aimed to determine, in light of current opinion and evidence, to what extent clinical pelvimetry continues to be practiced and used.

### Methods

We conducted a retrospective review of prenatal records in an approximately 3-month time frame at two separate military hospitals. One was an overseas hospital. The other was a US-based hospital at which there was a family medicine residency. The providers of prenatal care at both locations were board-certified family physicians, obstetricians, and nurse midwives. The providers had been trained at a variety of institutions (both military and civilian).

No prenatal records were excluded. We reviewed the records of active duty military women and spouses of active duty men. The physicians reviewing the records had not provided any of the initial prenatal care for the subject patients. Prenatal records were reviewed to ob-

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tain the details of clinical pelvimetry if performed, abnormal values if recorded, and subsequent clinic notes. Admission labor and delivery records were then reviewed to determine if clinical pelvimetry had been referenced or used in the management of the patients.

Simple descriptive statistics were used to present data. There was no attempt to use inferential statistics to analyze results by provider specialty because of the small number of patients per individual provider.

## Results

A total of 660 records were reviewed. Seventy percent (461) listed all pelvimetry measurements as normal, had written "good for TOL (trial of labor)," "proven to XX pounds," or similar annotation that pelvimetry was normal. Nine percent of records (58) had no documentation of pelvimetry (section of chart blank). The remaining 141 (21%) charts had at least one pelvimetry measurement listed as abnormal on the initial exam. No admission note, progress note, or operative note made reference to clinical pelvimetry. No abnormal pelvimetry result was referenced in follow-up visits or appeared to make any difference in mode of delivery or management of labor. Two women (one at each institution) had initial prenatal visit notes indicating the need to consider radiographic pelvimetry at the time of labor based on clinical pelvimetry during prenatal care. Radiographic pelvimetry was not performed in either case, however, and both women delivered vaginally. No patients with breech presentation attempted vaginal delivery.

## Discussion

Pelvimetry, or the measurement of the size of a woman's pelvis, is done to determine if adequate space exists for the passage of a fetus. Pelvimetry can be performed during a bimanual exam (clinical pelvimetry), by conventional X rays, by computerized tomography, or via magnetic resonance imaging (MRI). The process of performing clinical pelvimetry involves a detailed bimanual exam in which various measurements of the pelvis are estimated and recorded. The goal of pelvimetry of any type is to accurately predict which patients will have cephalopelvic disproportion (ie, a fetus that is too large to pass through the maternal pelvis). Yet, one text, prior to its description of clinical pelvimetry, states that "Pelvic adequacy is proved only by a trial of labor."<sup>1</sup>

Clinical pelvimetry is usually performed on the first prenatal visit during the examination that includes a Pap smear and genital cultures. It is assumed that pelvimetry results will be used to assist the provider during the delivery process, but there is little in the medical literature to support this notion.<sup>4-8</sup> Our study was conducted to determine to what extent clinical pelvimetry is still being performed and if it influences man-

agement of labor and delivery. We found that performance of clinical pelvimetry did not influence labor and delivery management. We did, however, find that clinical pelvimetry is still often performed, at least in the military hospitals studied in this research, but its performance is erratic, poorly documented, and occurs with little follow-up.

One possible reason for the continued performance of clinical pelvimetry is the fact that standard prenatal forms continue to include clinical pelvimetry sections that providers may feel compelled to complete. Indeed, the American College of Obstetricians and Gynecologists Antepartum Record includes a place for recording pelvimetry results, and physicians using this and other prenatal forms may perform and fill in pelvimetry results because they are reluctant to leave such spaces blank.

## Limitations

Our study has limitations that should be noted. First, the study was conducted at military hospitals, which may not be representative of care provided by physicians in other settings. We don't think this is likely, however, since the providers in this study were trained in a broad range of settings, including civilian training programs, and they adhere to usual practice standards set by professional organizations. Second, we judged pelvimetry to have been performed only if it was documented in the medical record, and documentation of the performance of pelvimetry in medical records may have been incomplete. If this was the case, however, it would underestimate, rather than overestimate, the rate with which pelvimetry is performed. Similarly, it is possible that providers did consider prenatal pelvimetry results when managing labor and delivery and just failed to note this in the record. We believe this is unlikely, since no patient with an abnormal pelvimetry was excluded from a trial of labor.

## Conclusions

The results of our study question the utility of performing clinical pelvimetry during prenatal care. Performance of clinical pelvimetry in this study of more than 600 patients only served to document that abnormal pelvimetry results obtained during prenatal care were seemingly ignored during labor—a fact that could be used in lawsuits against delivering physicians if outcomes are suboptimal. Our study provides additional support to the Institute for Clinical Systems Improvement Prenatal Care Guideline recommendations that some routine practices in perinatal care (including clinical pelvimetry) should be abandoned.<sup>9</sup>

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*Editor's Note:* This paper was acknowledged at the 2003 American Academy of Family Physicians Annual Scientific Assembly as an award-winning paper in the category of research by a family physician primarily in clinical practice (Dr Blackadar).