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Inducing a Primigravida With an Unripe Cervix for Suspected Macrosomia

Question

Is it wise to induce a primigravida at 39+6 weeks with an unripe cervix for suspected macrosomia (US-4390 gm, fundal height 42 cm)? I'm against it, but my partners are for it.

Response from Ronald M. Cyr, MD

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As group practice becomes the norm in this country, management decisions are often made by individuals who will not be present to implement them. Unless a group is uncommonly homogeneous in its philosophy and practice style, this creates dilemmas for the on-call provider. It can be disconcerting to find that your partner has promised a vaginal breech delivery to his patient, or is inducing a 35-weeker for pregnancy-induced hypertension that seems rather mild to you.

Here's the short answer to the question posed above: It's not good obstetrics, but each case must be individualized. Induction for suspected macrosomia raises a host of important questions about how we practice obstetrics:

1. What is macrosomia?
2. How accurate are estimates of fetal weight?
3. Is fetal size all that matters?
4. Does induction prevent shoulder dystocia or reduce operative delivery?

In previous Medscape Obstetrics and Gynecology Journal Scans (April 2002, May 2002, August 2002, May 2003),^[1] I reviewed articles dealing with macrosomia, induction, and shoulder dystocia, and I can do no better than to reiterate some of my earlier comments.

Some authors consider 4000 g (90th centile) to be macrosomia, whereas others use 4500 g (99th centile). The 2-standard deviations rule for defining biological abnormality would support using the larger number as a definition. Multiparity, maternal obesity, gestational diabetes, previous macrosomic infant, and infant male sex are all significant risk factors for macrosomia. Numerous retrospective studies show that neonatal morbidity increases with size; operative vaginal delivery, epidural anesthesia, and induction of labor are independent risk factors for shoulder dystocia. Nevertheless, the vast majority of large babies deliver vaginally without difficulty, and most cases of shoulder dystocia occur in neonates weighing less than 4000 g.

In this age of "evidence-based medicine," why do we keep ordering ultrasounds for estimated fetal weight (EFW) when the best-published algorithms have a 10% to 15% error? Why do we attach greater significance to a printed report than to our own best guesstimate? These are more than rhetorical questions. Numerous protocols, including ACOG publications, use EFW as a basis for making clinical decisions. Such recommendations become "standards of care" that are difficult to ignore in the American medico-legal climate.

The emphasis on fetal size in discussions of difficult labor has overshadowed the (seemingly obvious) importance of pelvic capacity and shape in the causation of dystocia. At one time, no discussion of labor was complete without a consideration of the three "Ps" (passenger, passage, powers). However, systematic clinical pelvimetry has seldom been taught or practiced in the past 50 years, and x-ray pelvimetry went out of fashion in the early 1980s. The contracted pelvis described in older textbooks are rare in contemporary American practice, and ordinary pelvic examination is inadequate to identify minor bony abnormalities. The inescapable conclusion is that no obstetrician can reliably predict dystocia. Every labor is a trial of labor.

Since a fetus gains almost 200 g a week during the last 2 months of pregnancy, early induction of labor offers an opportunity to modify one of the variables associated with dystocia. Indeed, premature induction of labor was once widely employed in women with suspected pelvic contraction or a history of traumatic birth; the benefits of such intervention were tempered by the increased fetal morbidity of prematurity. In a multipara with a history of macrosomia and difficult birth at 42 weeks, induction at 38 weeks may reduce fetal size sufficiently to facilitate labor. In the case under consideration, it is doubtful that inducing labor 1 week earlier will make much difference clinically.

Achieving vaginal delivery in the primigravida with an unfavorable cervix is an uncertain process that requires patience. Despite our best efforts, all this work often ends in cesarean section (C/S) after several frustrating days for both staff and family. In my experience, the rate of C/S in such circumstances is at least 35%. If the patient is labeled "suspected macrosomia," the threshold for intervention will be even lower, and she may never undergo an effective "trial of labor."

The only way to eliminate shoulder dystocia would be to perform C/S in 100% of women -- and even that might not prevent all cases of brachial palsy. Rouse^[2] calculated that 3695 C/S would have to be performed in order to prevent each case of permanent brachial palsy in fetuses estimated to weigh > 4500 g by ultrasound measurement. Because neither the public nor the profession would consider this a reasonable strategy, birth attendants are forced to evaluate each pregnancy on its own merits. This is called clinical judgment, and it will ever be an imperfect art. Suspected macrosomia in a woman with multiple risk factors, short stature, narrow outlet, and an unfavorable cervix might well be managed by elective C/S. In most instances, awaiting the onset of labor and managing it in the usual way is the best approach -- erring on the side of early C/S where second stage descent is slow.

It is always a good idea to involve the patient and her family in the decision-making process, and the prudent obstetrician will keep detailed notes of such discussions.

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References

1. Medscape Obstetrics and Gynecology Journal Scan. Available at: <http://www.medscape.com/px/viewindex/more?Bucket=JournalScans&TopicId=964>
2. Rouse DJ, Owen J, Goldenberg RL, Cliver SP. The effectiveness and costs of elective cesarean delivery for fetal macrosomia diagnosed by ultrasound. JAMA. 1996;276:1480-1486.

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