After Office Hours

Once a Section, Always a Trial of Labor?

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A DIFFERENCE of opinion exists among obstetricians concerning the best plan of management of patients with prior cesarean section. Some advocate a repeat cesarean section for every such patient, others suggest a "trial of labor" for all such patients, and most take a middle-of-the-road course, individualizing each patient's care. The problem may be analogous to the question of "holding a kicker" in draw poker, where deciding which action is appropriate has a greater reality than the mathematical odds as such.[3, 8]

As in poker, an attempt to decide the course to follow with a given patient can be based on information derived from expensive experience. Our problem is to examine the available data in a meaningful way.

Specifically, the real question for the clinician is not whether uterine rupture is safer than elective repeat section, but whether labor or elective repeat section is safer for mother and fetus in the presence of a cesarean section scar.

Most proponents of individualization will allow a trial of labor in only those patients who have had a vaginal delivery of an average-sized infant in a pregnancy prior to the gestation terminated by cesarean section. But, if the *initial* pregnancy was terminated by cesarean section, usually for disproportion, they will not permit labor. This is illogical, because they are exposing to labor the patients with the greatest chance of rupture of a low-segment scar and refusing to allow labor in the safest group. The danger of rupture of the low-segment scar is greatly increased where the initial section has been done because of placenta previa, abruptio placentae, transverse lie, or cord prolapse.[9] Since these are the usual indications for performing cesarean section on a patient who has previously been successful at term vaginal delivery, one who braves labor in such patients as these should have no qualms about allowing all patients with a prior low-segment section to labor.

The second point deals with perspective. One's conclusions are based upon experience, or actually, upon his interpretation of his experience. In a recent article on this subject, Morley, after an excellent discussion, concludes:

> A comparative study of repeat elective cesarean section and subsequent vaginal delivery could not be undertaken since these philosophies do not co-exist in our institution. Ideally, if all the criteria mentioned above

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TABLE 1. CONSEQUENCES OF RUPTURE OF THE LOW-SEGMENT SCAR

Author	Incidence of rupture (%)	Maternal mortality with rupture		Perinatal loss with rupture (%)
		%	No.	
Morley	0.25	0.1		7
Salzmann	0.6	0	13	33
Birnbaum	1.0*	0	12	No increase
Donnelly	—	0	8	12
Peel	0.5			
Pedowitz		0	20	

* Type of scar not specified.

could be fulfilled, then each case could be individualized. Since this cannot be accomplished today in over 85 percent of the hospitals in this country that care for obstetrical patients, the wisdom, safety, and advisability of changing the philosophy toward repeat elective cesarean section seems questionable. If a concerted effort is made to avoid prematurity by an accurate interrogation of the patient, by proper physical examination, and by adequate roentgenologic evaluation, the one major problem about repeat cesarean section can almost be eliminated.

In a review of 215 consecutive cases of repeat cesarean section, the corrected fetal mortality of 0.9% and the corrected prematurity rate of 0.4% compared favorably with statistics presented by proponents of subsequent vaginal delivery following primary cesarean section. In addition, since arbitrary limitation of the number of cesarean sections per patient no longer seems justified, it is recommended that repeat elective cesarean section be considered the treatment of choice for these patients.

Morley is patently correct in affirming the great danger to a patient with a previous cesarean section allowed to labor unattended. I believe that he is also correct in stating that good antenatal evaluation can lower the prematurity rate at elective repeat section. However, the fact that two people can examine the same data and arrive at diametrically opposed conclusions can be demonstrated from his report. Specifically, let us examine his data, asking ourselves: What method of delivery shall we plan when the patient with a history of cesarean section presents for prenatal care? I concede that he is correct for patients with classical section, but not for those with a history of a low-segment transverse section.

With no further selection, let us consider 10,000 patients with a low-segment scar. From Line 1 of Table 1, taken directly from Morley's paper, we see reported an incidence of rupture of 0.25%. Thus our hypothetical 10,000 ladies with scarred uteri would yield 25 ruptures. The maternal mortality if rupture occurs is 0.1%. Therefore, it would take 1000 ruptured uteri or 400,000 patients with lower-segment scars to yield one maternal death from this cause. Considering the infant, even if we raise Morley's 7% figure to 10% for arithmetic convenience, the 25 ruptures in 10,000 scarred uteri would yield 2.5 fetal deaths from this cause. Using the same author's figures for elective repeat section, both maternal and fetal losses are considerably greater. From Table 2 we find that 10,000 of these operations would yield 10 maternal deaths (therefore, 400,000 would yield 400 deaths), and using the uncorrected fetal mortality rate, this number of repeat cesarean sections would yield 270 fetal losses. Using the *corrected* fetal mortality rate of 0.9% which the author arrived at by the corrections reproduced in Table 3, the calculation is as follows: 10,000 repeat sections would yield 90 perinatal deaths. The same number of patients allowed to labor in spite of the uterine scar would yield 25 uter-

TABLE 2. CONSEQUENCES OF REPEAT CESAREAN SECTION

	Maternal mortality (%)	*Perinatal loss (%)*	
		Uncorrected	*Corrected*
Morley	0.1	2.7	0.9
Donnelly	0.12	—	1.1
Muller*	0.2	3.8	1.5

* 5458 repeat cesarean sections compiled.

TABLE 3. FETAL MORTALITY IN 215 REPEAT ELECTIVE CESAREAN SECTIONS

Total	220
Total deaths	6
Uncorrected fetal mortality rate	2.7%
Causes of fetal mortality	
Severe erythroblastosis fetalis	2
Gross congenital anomalies	1
Placental insufficiency	1
Atelectasis	2
Corrected fetal mortality rate	0.9%

From Morley.

TABLE 4. LOSSES DUE TO REPEAT CESAREAN SECTION AND THOSE DUE TO RUPTURE OF LOWER-SEGMENT SCAR*

	Maternal loss (No./10,000)	*Perinatal loss (No./10,000)*
ELECTIVE SECTION		
Best results	10	90 (Corrected)
TRIAL OF LABOR		
Best results	0	10
Worst results	.025	20

* Projected behavior of 10,000 "scarred" uteri.

ine ruptures and, at most, 2.5 fetal deaths due to the rupture per se. Of course, one must add to this the general perinatal loss associated with vaginal delivery.

For the sake of fairness, let us compare in the same manner the worst results associated with rupture of a low-segment scar and the results compiled by Muller *et al.* (Table 2, Line 3) for 5458 repeat cesarean sections. Then: (1) 10,000 scarred uteri yield 60 ruptured uteri; (2) 60 ruptured uteri yield 20 fetal deaths; (3) Therefore, 10,000 patients with previous low-segment scars allowed to labor yield 20 dead babies, as a result of uterine rupture.

The worst maternal results associated with uterine rupture are Morley's of 1 death per 400,000 labors in scarred uteri, as noted above, and the compiled results associated with repeat section are 20 maternal deaths per 10,000 sections.[5] The differences between these figures probably have the same practical significance as the differences in the odds against holding a royal flush and the odds against holding an "ordinary" straight flush. Maternal death in the presence of a lower-segment scar is a great rarity with either labor or elective section. Salzmann states: "There were no ruptures of low segment scars following section for fetopelvic disproportion." In Table 1, a collection of 53 instances of uterine rupture led to no maternal deaths.[1, 2, 6, 9]

Assuming that in a moment of dementia we adopted the policy of allowing all patients with a history of a previous low-segment transverse cesarean section to enter labor, what percentage would deliver vaginally? Birnbaum noted at the New York Lying-In Hospital, that of 210 patients with previous cesarean section, 116 had repeat cesarean section for no indication other than previous cesarean section. Of the remaining 94 patients, 77, or 82%, delivered vaginally. (Patients with classical as well as low-segment scars were included in this group.) Further information may be derived from Peel, who noted that of 66 patients who had been subjected to primary section for *suspected disproportion* of varying type, 51, or 77%, subsequently delivered vaginally with no difficulty. He goes on to point out that the degree of dilatation attained prior to the section being performed has "very little bearing on the subsequent success or failure of vaginal delivery."

Therefore, by allowing a trial of labor for all such patients, and performing cesarean sections only for indications existent in the *present* pregnancy or labor, we may anticipate vaginal delivery in roughly four-fifths of cases.

The reader may ask, why, if this is not merely arithmetic sleight-of-hand, has this practice not gained wider acceptance? Why are these calculations so contrary to classic teaching? I think that the reason is again one of perspective. First, we must begin to ask the proper question—that is, whether labor or repeat section is safer for mother or fetus in the presence of a low-segment scar. Second, in the days when the dangers of labor in the face of a uterine scar were made clear to the profession, we were dealing with many classical scars, many sections performed by nonspecialists, and many performed after long and often infected labors. The man who elected a subsequent trial of labor in such a patient was "drawing to an inside straight." Allowing a patient with a transverse lower-segment scar a trial of labor is more analogous to "standing pat with two pair"; you may lose, but the odds are on your side!

In summary, the presence of a transverse lower-segment scar seems to add little maternal and fetal risk to that inherent in labor and vaginal delivery (Table 1).

Anyone for poker?

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