There are definite risks associated with VBACs, and many hospitals and physicians think that these risks can be avoided by routine Elective Cesarean Section (ECS) — “once a Cesarean, always a Cesarean.” However, there are SERIOUS RISKS associated with ECS that are NOT associated with a normal, vaginal birth. This analysis provides guidelines for prudent midwives / obstetricians who are faced with the choice of:

- Advising a patient to deliver a child by VBAC, or
- Advising the patient to have a repeat cesarean section.

What are the chances of the child and/or mother being injured by either of the above? Multiple factors are involved in this dilemma, but most of them devolve onto two aspects:

- The integrity and position of the uterine scar that was incurred at previous C-section.
- The risks to the mother and child of elective C-section (ECS).

Information on the incision and the scar can be obtained from the medical records of the previous C-section, using knowledge of the anatomy of the uterus and the changes that occur with pregnancy and labor. (Fig. 1.)

The risks of Elective C-Section [1-7] are well documented in literature; they are very serious, but are not well understood by the professions or the public.

The Uterine Incision and the Uterine Scar: Hazards and Precautions

In the operative record, most uterine incisions are described as “low transverse incisions in the uterus,” but this can entail two very different incisions. The incision may be:

1. In the thinned-out, lower segment of the uterus, (during labor, or the term primap)
2. In the thick, lower part of the uterine fundus in the non-laboring uterus. (See Fig. I)

Knowledge of the anatomy and functions of the fundus, the isthmus, and the lower segment of the uterus is required to understand the very different types of scars that are produced by these different uterine incisions and the eventual locations of those scars. The type of repair of these incisions is crucial to the integrity of the subsequent scar and to the safety of future vaginal delivery.

Accurate approximation of incised or separated muscle tissues and the EDGES of the endometrium will result in close healing, and thin or absent scarring. Inclusion of “turned in endometrium to endometrium” will result in non-healing and weak scarring. (See Fig. 2) The operative description of the closure of the uterine incision at the original cesarean section, plus

The term “Fundus” incorporates all the uterus above the isthmus; this constitutes the upper uterine segment in labor, the contractile portion. The isthmus dilates in labor forming the lower segment.
In the thin Lower Uterine Segment incision the wound is usually extended laterally with finger pressure, separating the circular fibers. A single, continuous suture will usually approximate the wound well and shorten it. The needle passes near to, but does not involve the endometrium.

With transverse fundal incisions through thicker muscle, a similar suture is placed next to the endometrium, then buried with a second closure layer. For vertical “classical” incisions, multi layer closure is used.

This diagram represents careless inclusion of endometrium in the wound. There is poor approximation of muscle to muscle resulting in a thin and weakened scar.

the “labor / non-labor” status of the patient, is crucial in evaluating scar risk.

The Lower Segment (Isthmus) Scar
The isthmus is the sphincter of the uterus – it keeps the pregnancy in the fundus. In the last week of pregnancy in the primip, or in labor, the isthmus is thinned out and dilated to form the lower segment of the uterus. (Fig. 1) A well-repaired, lower segment incision results in a tiny scar about one centimeter long between, and parallel to, the circular muscle fibers of the uterine isthmus. There is no risk of placental implantation over this scar, and if the incision is well repaired, it is virtually risk free from rupture during subsequent labor; close supervision in labor is still required.

The Low Transverse Fundus Scar
A well repaired, low fundal incision may also be of minimal risk and advisable for VBAC. The scar is in the part of the uterus that does not (and should not) dilate in labor. It is the part that contracts, dilating and pulling open the lower segment and the cervix. The scarred area of the uterus is available for ultrasound evaluation prior to and during labor. If labor progresses normally with progressive dilatation of the cervix and descent of the presenting part, safe vaginal delivery should be anticipated. Augmentation of labor should not be used. If the placenta is anterior and low-lying, over or near the scar, cesarean section may be the safest delivery mode. (Fig. 1)

The following are clinical signs to indicate that operative intervention may be required and should not be delayed if they intensify:

- Slow or arrested descent and cervical dilatation despite strong contractions
- A heavy “show” early in cervical dilatation
- Increasing supra-pubic tenderness between contractions; rebound tenderness
- Progressive thinning of a low fundal scar visualized on ultrasound.

It should be noted that most attempted VBACS are successful, with minimal risk to mother and child. Pre-VBAC evaluation should be thorough with provision for intervention if needed. Provision for avoiding the hazards of Cesarean Section should also be procured in advance.

The Maternal Hazards of Elective Cesarean Section
While modern surgery has made Cesarean section very safe, it is major intra-abdominal surgery and is not risk free for the mother. Anesthetic complications are possible, and risk of infection, venous thrombosis and embolism are increased over vaginal birth. At EC-Section, the patient is seldom in labor and the uterine incision is made through the lower part of the fundus. (Fig 1) Repair of this incision is seldom meticulous as the incised muscle bleeds freely, blood loss can be copious, and rapid hemostasis with hasty suturing is routine. The integrity of the resulting scar is thus dubious (Fig. 2); its position in the uterus is not.

Any scar in the fundus is at risk for future implantation of the placenta over it (Fig. 1), leading to two possible complications:
1. The maternal blood supply to the placenta through the scar is not surrounded by muscles that normally contract and stop bleeding after the placenta is delivered. Excessive post partum blood loss from the scar may result.

2. Rarely, the placenta may implant through the scar (placenta percreta) and grow on the bladder and other extra-uterine tissues. Delivery is always operative and blood loss in these cases is routinely massive; maternal deaths from blood loss do occur.

These complications can be avoided either:
- By allowing all elective C-sections to go into labor or
- By inducing labor until the cervix begins to dilate.

At this stage, the lower segment of the uterus is developed and the C-section incision is made through it. The resulting scar is in the isthmus where the placenta cannot implant on it. (Fig. 1) The only case where this cannot be done is in placenta previa. A laboring uterus is also very beneficial to the child. [2]

The Hazards of Elective Cesarean Section for the Newborn

Elective C-section (ECS) carries a greatly increased risk of serious respiratory complications and death for the newborn. Over many years researchers [1 - 6] have noted that a large number of ECS babies have serious respiratory diseases:
- Persistent Pulmonary Hypertension (PPH) (Persistent Fetal Circulation (PFC))[2,3,5]
- Transient Tachypnea of the Newborn (TTN) [2,3]
- Respiratory Distress Syndrome (RDS) [1 - 6]

Recently, a greatly increased risk of autism has been reportedly in elective cesarean section babies - several times greater than the risk of autism in vaginal births. [7]

What kind of “ECS” risk TO THE CHILD are these studies reporting? The risk of PPH / PFC is FIVE TIMES higher in ECS than in Vaginal Birth, [3] and PPH / PFC is a potentially fatal complication - the child may die. The other diagnoses (TTN, RDS) are less lethal but are seldom encountered at a home birth. Premature births are nearly always referred to an institution and end up in an NICU anyway. Home-delivered births over 37 weeks’ gestation are seldom admitted to an NICU. In hospital, every child with these diagnoses (PPH, PFS, TTN, RDS) is admitted to the NICU. [9] If ECS is done from 37 to 40 weeks, the incidence of respiratory disease increases with prematurity. [5]

Unfortunately, the ultimate risks to the child do not disappear when these respiratory disorders are corrected with intensive care. Glasson [7] reported a marked increase in childhood autism in ECS babies, and there are multiple reports of abnormal birth and NICU admission preceding the eventual diagnosis of autism and mental retardation in the childhood years. [8, 9]

At the present time, overall, the chances of a maternal death from placenta percreta or pulmonary embolism greatly outnumber the chances of a maternal death from a ruptured VBAC scar, even if this occurs at home. On the neonate’s side, the chances of healthy physical and mental development following a successful home VBAC delivery by a midwife are enormously superior to delivery by ECS in a University hospital. The ECS child is at high risk for serious respiratory disorders, autism and mental retardation.

What if there is absolute indication for a repeat ECS, such as a severely contracted pelvis? Can risk to the ECS child be reduced or ameliorated?

There is a rational solution to this dilemma, and that lies in making ECS a much safer procedure by incorporating midwives and midwifery techniques into operating room procedures. In 1950, Landau reported ZERO cases of respiratory failure after full placental transfusion [6] of 87 successive term C-sections – no cord clamping. Midwives routinely permit full placental transfusion at every birth – no cord clamping – the cord is not clamped until the placenta has delivered. Immediate cord clamping (ICC) is practiced routinely at C-sections.

The midwife / home-birth child receives a maximal / optimal blood volume after birth, and this amount of blood fills the lungs and all other vital organs, converting the fetal circulation to the adult circulation, preventing PFC and RDS. [4] This blood also gives the child enough iron to prevent infant anemia. Infant anemia frequently leads to neural and cognitive defects (mental deficiency, autism) in later childhood years. [10 - 14]

This degree of perfection could be obtained for every child at ECS if a midwife were in charge of the management of the umbilical cord and placenta in the OR. If development of the lower uterine segment (labor) has been induced prior to surgery, and the uterus is contracting regularly during and after delivery, the child, with its intact cord, will be equipped with a maximal, optimal blood volume when the uterus expels the placenta – blood is squeezed from the placenta into the child. The incision in the developed lower uterine segment, rationally repaired, will ensure optimal chances of a safe future pregnancy, and a safe, home, future vaginal delivery. (Fig. 1)
In Summary

The risks of ECS to the mother and child can be reduced by inducing labor and developing the lower uterine segment before surgery. A scar in the isthmus increases the chances for a safe and successful future VBAC and avoids the risks of repeat ECS.

For the child, the bottom line is that the child's neurological and mental status (for the rest of its life) is very dependent on the umbilical cord NOT being clamped. The umbilical cord should be allowed to clamp itself, naturally and normally, without iatrogenic interference. The following photograph is of a neonate that clamped its own cord at C-section:

This is more than three minutes after birth, the cord is not clamped. The mother's uterus is contracting with IV oxytocin. The cord arteries are white streaks, not pulsating; the cord vein has constriction bands and tense blood loops that indicate high pressure and closure of all umbilical vessels in the child's abdomen. Apgar is ten. The child has received a full placental transfusion and is not at risk for infant anemia, infant iron deficiency, autism, mental retardation, or childhood development disorders. It has a normal, optimal blood volume. It is a normal, healthy newborn.

References:

Dr. G. M. Morley is a retired obstetrician / gynecologist. Email: obgmmorley@aol.com

Reference web sites:
www.autism-end-it-now.org
www.birth-brain-injury.org
www.cordclamp.com