

Title: RISKS OF PLACENTA PREVIA / ACCRETA IN PATIENTS WITH PREVIOUS CESAREAN DELIVERIES

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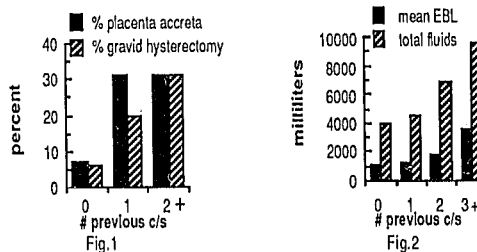
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**Introduction.**

Patients with placenta previa who have not undergone prior cesarean delivery (cesarean delivery) have a 5% risk of placenta accreta<sup>1</sup>. The incidence of placenta previa has been reported to be increased in patients with pre-existing uterine scars. It has been reported that 25% of patients who have undergone one prior cesarean delivery will develop placenta accreta during the course of their gestation and most will require a gravid hysterectomy to control bleeding. Surgical considerations, potential blood loss and fluid requirements may require alterations to the usual anesthetic approach to these patients. However, little is known regarding the effect of anesthetic technique on the surgical course and outcome of patients with placenta previa. We therefore determined to examine the surgical and anesthetic management of a large group of patients with placenta previa in one institution.

**Methods.** The protocol was approved by the hospital's Committee for the Protection of Human Subjects from Research Risks. The inpatient records of all patients who were admitted to the hospital for delivery between October 1, 1982 through November 30, 1986 have been retrospectively reviewed. Patients with placenta previa were identified with the hospital's computerized record retrieval system. Patients with marginal placenta previa who were allowed to undergo vaginal delivery were not included. All charts identified were reviewed for current and past obstetric history, presence and degree of placenta previa/accreta, and anesthetic and obstetric management. Specifically, anesthetic technique(s), estimated blood loss and fluid replacement, perioperative vital signs, ECG patterns, coagulation parameters, and postoperative complications and outcome were recorded.

**Results.** There were 34,392 deliveries during the study period. 180 patients with placenta previa who underwent cesarean delivery were identified for an overall incidence of 0.5%. Figure 1 illustrates that there was a statistically significant increase in the risk of developing placenta accreta in these patients. The risk rose from 7% with no prior history of cesarean delivery to 31% with a history of one or more prior cesarean delivery. (p < .001) The risk of requiring a hysterectomy during the cesarean delivery increased similarly from 6 to 20% with one prior cesarean delivery and to 31% with more than one cesarean delivery. Figure 2 illustrates that increases in blood loss and fluid requirements were found to increase with increasing numbers of previous cesarean deliveries. with placenta previa in the various categories.



It can be seen that there is a predictable, nearly linear increase in fluid requirements in these patients with increasing numbers of previous cesarean deliveries (R=.87). Perioperative fluid replacement averaged 4383 ±1796 ml in patients who did not require hysterectomy, compared to 16,300±4383 ml in patients who did require hysterectomy (p<.001). Intraoperative blood loss and fluid replacement were found to be significantly less (p<.01) in patients who had regional anesthesia as compared to general anesthesia, with no higher incidence or duration of perioperative hypotension.

**Discussion.** The risk of placenta accreta in patients with placenta previa is much greater in patients who have had a prior cesarean delivery than in those who have not undergone prior cesarean delivery (primary cesarean delivery). Perioperative fluid requirements are significantly increased in patients who have undergone previous cesarean delivery and present for repeat cesarean delivery with placenta previa. Measures that will allow for rapid blood and fluid replacement in such patients must be taken prior to the start of surgery. This should include placement of several large-bore intravenous catheters and the ready availability of cross-matched blood, as the blood loss can be overwhelming and rapid. One of our patients (who is not included in the above study) received 101 units of red cells and was placed on cardiopulmonary bypass for cardiovascular support during her cesarean hysterectomy. Regional anesthesia is not necessarily felt to be contraindicated in this patient population if such measures are taken, and in fact, particularly in cases of simple placenta accreta, may decrease the amount of blood loss.

We would not use regional anesthesia for cesarean delivery if placenta percreta was suspected on ultrasonographic examination, as these patients seem to undergo the most sudden and dramatic blood loss. In addition, regional anesthesia may have to be abandoned in the face of rapid and continuing blood loss, or if surgical anesthesia is inadequate.

<sup>1</sup>Chestnut DH, Eden RD, Gall SA, Parker RT: Peripartum hysterectomy: a review of cesarean and postpartum hysterectomy. OBSTET GYNECOL. 65:365-70, 1985