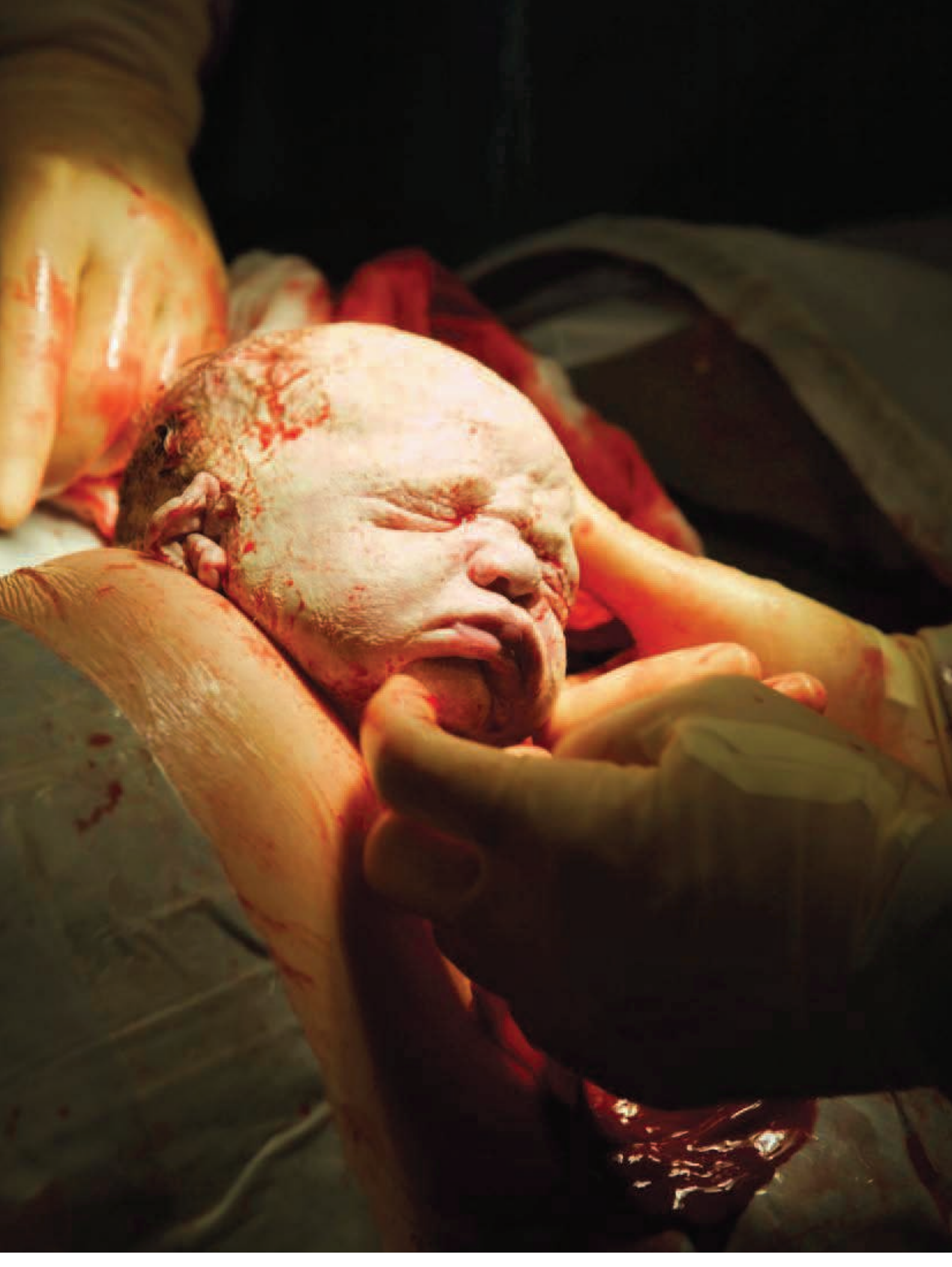


Repeat Cesarean Section

Bryce Phillip Kiefer, cst

Reports of surgical removal of a fetus from its dead or dying mother have been dated from as far back as 3000 BCE in ancient Egypt. The procedure was performed at that time so that the fetus and mother could have separate burials.[2]

An ancient Roman law known as *lex caesaria* required the procedure be performed on dying mothers as an attempt to save the life of the fetus. The name of this law is sometimes cited as the origin of the procedure's name.[2]

Use of the crude procedure continued into medieval times with reported cases in Germany from the early 1400s and from France in the late 1500s. In 1663, a Dutch physician published illustrations of the procedure in a book on operative gynecology, and in 1738 an Irish midwife is reported to have performed the procedure successfully.[2]

Mortality rates remained high, though. It is estimated that 50 to 75% of women did not survive the procedure. Massive infection and internal bleeding were the biggest challenges physicians faced, so the procedure remained a last-resort option. Since anesthesia wasn't discovered until 1847, the agonizing pain inflicted on the mother was also a factor in deciding whether or not the procedure was necessary.

It wasn't until the early 1900s that cesarean section became a more acceptable alternative to other options of that time, including high forceps delivery and cutting the pubic bone. By 1960, the mortality rate was near zero, and today it is estimated that 25 out of every 100 births in the US are performed by cesarean section.

Table 1. Indications for cesarean section
Adapted from *Surgical Technology for the Surgical Technologist: A Positive Care Approach.* Thomson Delmar Learning. ©2004

Category	Indication
Maternal	Diseases—Eclampsia or severe preeclampsia; Cardiac disease; Diabetes mellitus; Cervical cancer; Herpes
	Prior surgery of the uterus—Cesarean section (especially classical type); Previous rupture of the uterus; Full-thickness myomectomy
	Obstruction of the birth canal—Fibroids; Ovarian tumors
	Other—Uterine rupture; Failure to progress (etiology unknown); Maternal demise
Fetal	Fetal distress (sustained low heart rate)
	Prolapse of the umbilical cord
	Malpresentation—Breech; Transverse; Brow
	Multiples (depends on number and presentation)
	Fetal demise
Maternal/ Fetal	Dystocia—Cephalopelvic disproportion; Failed induction of labor; Abnormal uterine action
Placental	Placenta previa
	Placental abruption

CASE STUDY: REPEAT CESAREAN SECTION

The patient is a 26-year-old female, gravida 4, para 3 with 41 weeks of high-risk pregnancy, and late prenatal care. According to the patient's medical chart, she has reported abdominal pain, edema in the feet and legs, and no contraception use prior to conception. The patient is morbidly obese.

Weight: 325 lbs
Height: 5 ft, 5 in
BP: 119/45
Temperature: 98.9° F
Pulse: 82 bpm
Respirations: 20/minute
O_2 saturation: 100%

PREOPERATIVE DIAGNOSTIC TESTING

Preoperative diagnostic testing included a urinalysis, a prenatal panel, a drug screen and a serology study. Results for the urinalysis and prenatal panel were within acceptable ranges. Results from the drug screen and serology study were negative.

The findings of the preoperative ultrasound were, "Single living intrauterine pregnancy, transverse lie, anterior grade II placenta with normal amniotic fluid index of 18.2 cm. Heart rate of 137 bpm."

PREOPERATIVE DIAGNOSIS

The patient's principal diagnosis was breech presentation-footling. Secondary diagnosis and concerns expressed by the patient's physician were the possibility that the umbilical cord was wrapped around the baby's neck, the patient's weight, the potential for fetal or placental problems, and previous cesarean section.

ROOM PREPARATION

Supplies

- Prep set
- Cesarean section pack
- Basin set
- Gloves
- Bulb syringe, one per infant
- Cord clamps, two per infant
- Cord blood container, one per infant

- Blood gas containers available
- DeLee suction device available
- Mity vac delivery system
- Suction canister
- Lap sponges, 18x18
- Temperature strip
- Surgical clippers
- Spinal anesthesia tray
- Hyperinflation system
- O_2 cannula
- Pediatric O_2 mask
- 12' suction tube connection
- Laparotomy drape or specialized C-section drape
- Surgeon-specific sutures and dressings

Equipment

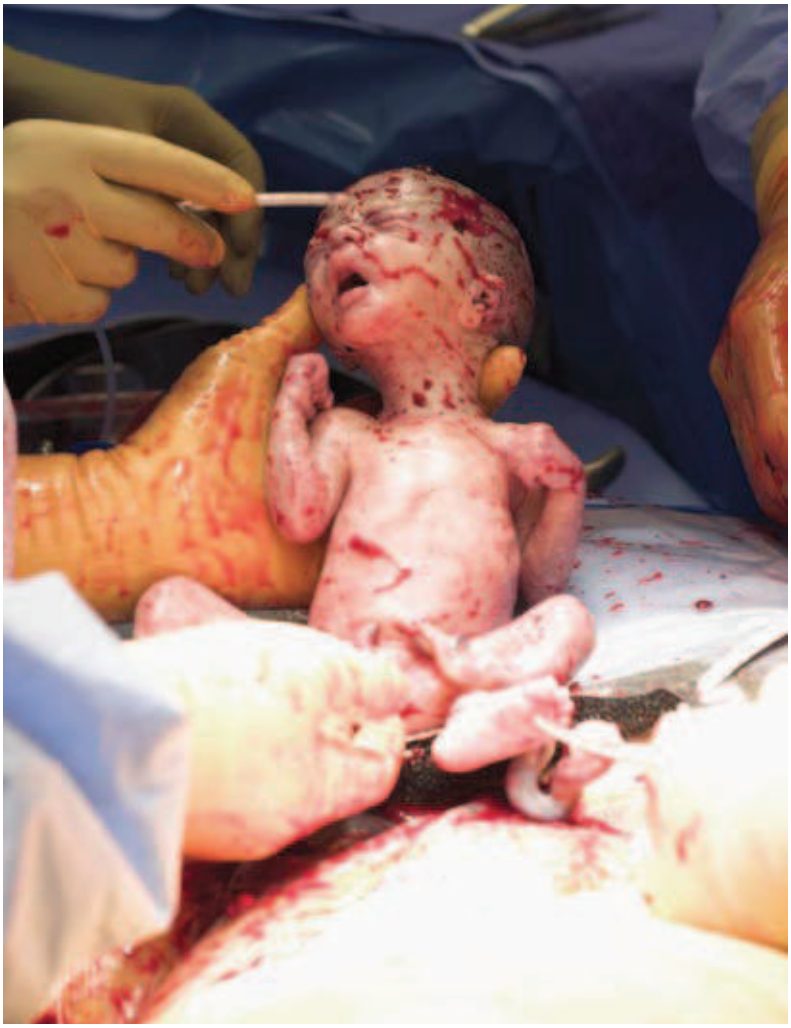
- Suction apparatus
- Electrosurgical unit—(In this case, the ESU was set at Cut 60/Coag 60, per surgeon request.)
- Fetal monitor
- Neonatal warming bed, one per infant

Instrumentation

- Knife handles, #3
- Needle holders
- Tissue forceps, short and long
- Adson tissue forceps
- Kelly clamps, short and medium
- Rochester-Péan clamps
- Rochester-Ochsner clamps
- Mayo scissors, curved and straight
- Metzenbaum scissors
- Bandage scissors
- De Lee universal retractor or bladder blade from Balfour retractor
- Richardson retractors
- Goelet or US Army retractors
- Allis clamps

Intravenous solutions

- Normal saline, 500 ml, for irrigation
- Lactated Ringers, 1000 ml
- A secondary IV set should be ready, if needed.



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Anesthesia

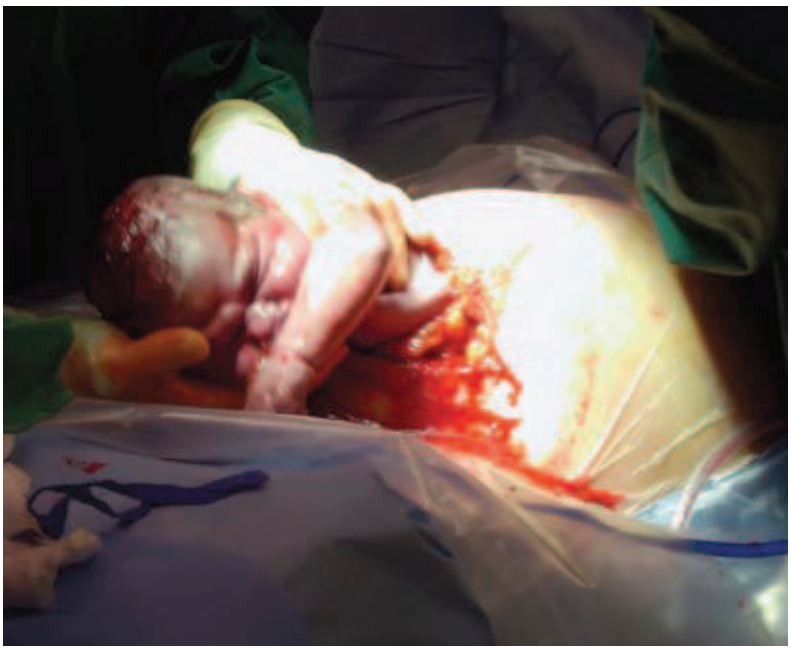
- Spinal
- Cefazolin sodium, 1 g
- Oxytocin, 10 units added to IV bag (with a second IV bag ready with 20 additional units to be used when directed by surgeon)

PATIENT POSITIONING

The entire surgical team should be in the room prior to the start of the procedure, including the anesthesia provider, surgeon, surgical technologist, circulator, as well as the neonatal team, including a registered nurse, a neonatologist (if necessary) and a respiratory therapist.

After an informed consent, the patient was taken to the O.R. The patient was morbidly obese with a large pannus. The umbilicus and pannus hung below the patient's pelvic bones.

The patient was transferred to the operating table and placed in the supine position. A bolster was positioned under the patient's right hip to offset abdominal weight and thus reduce uterine pressure on the vena cava. The safety strap was secured, and a Foley catheter was inserted.



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A blood pressure cuff, thermometer, ECG electrodes and a pulse oximeter were placed on the patient. A grounding pad was then positioned as close to the operative site as possible, taking care to avoid bony prominences.

SKIN PREPARATION AND DRAPING

Skin preparation solution was applied from midchest to the pubis and to the sides of the patient all the way down to the operating room table as far as possible. Next, the vaginal region extending to the inner thighs was prepared. Prior to preparation, the circulator shaved the area with disposable clippers.

Folded towels were used to square off the operative site, and a specialized C-section drape was placed.

PROCEDURAL OVERVIEW

After completing the "time-out" procedure, a #10 blade was used to incise the skin via a midline vertical incision. The skin and adipose tissue were retracted, and the incision was carried to the level of the fascia.

The fascia was incised at the midline and carried laterally on both sides using Mayo scissors.

The posterior fascia was bluntly dissected from the rectus abdominus muscle and secured with two Kocher clamps. Sharp dissection of the aponeurosis was accomplished superiorly to near the umbilicus and inferiorly to the symphysis pubis using Mayo scissors.

The peritoneal cavity was entered atraumatically via a longitudinal incision extended to the length of the fascial opening. The uterus was palpated to determine fetal position.

The vesicouterine fold of the peritoneum was incised, and the bladder was freed from the uterus with Metzenbaum scissors and retracted inferiorly with a bladder blade.

A small transverse incision was made in the lower uterine segment and carried bilaterally with Lister bandage scissors.

All sharp and metal objects should be removed from the field before the delivery.

The neonate's legs were grasped and drawn from inside the uterus. The torso was delivered next, followed by the shoulders (left first). And then the head was delivered by arching the baby's torso toward the mother's abdomen.

The umbilical cord was clamped with two Mayo clamps and then cut with Lister bandage scissors. Three loops of the cord were unwrapped from around the neonate's neck, and a cord blood sample was collected.

The neonate was then passed to the awaiting neonatal team. During this part of the procedure, extra caution should be taken by the surgical technologist to protect the sterile field and Mayo stand.

The placenta was dissected from the uterine wall, inspected and placed in a designated basin on the back table to be sent to pathology for analysis. Then the uterus, fallopian tubes and ovaries were exteriorized and enclosed in a wet laparotomy sponge.

The uterine incision was closed in two layers using 0 synthetic absorbable suture. Hemostasis was achieved by use of the electrosurgical unit.

The vesicouterine fold of the peritoneum was approximated with 2-0 synthetic absorbable suture and toothed forceps, and hemostasis was secured.

The uterus, fallopian tubes and ovaries were placed back into the peritoneal cavity. The paracolic gutters and cul-de-sac were cleaned of any remaining clots and blood.

The abdomen was then closed in layers as follows:

- Peritoneal closure was accomplished with 2-0 synthetic absorbable suture
- The rectus sheath was closed with 0 suture.
- The subcutaneous tissue was closed with 2-0 synthetic absorbable suture.
- The skin was approximated and closed using staples and two Adson tissue forceps.

The patient tolerated the procedure well and was sent to recovery in stable condition.

NEONATE'S VITAL SIGNS

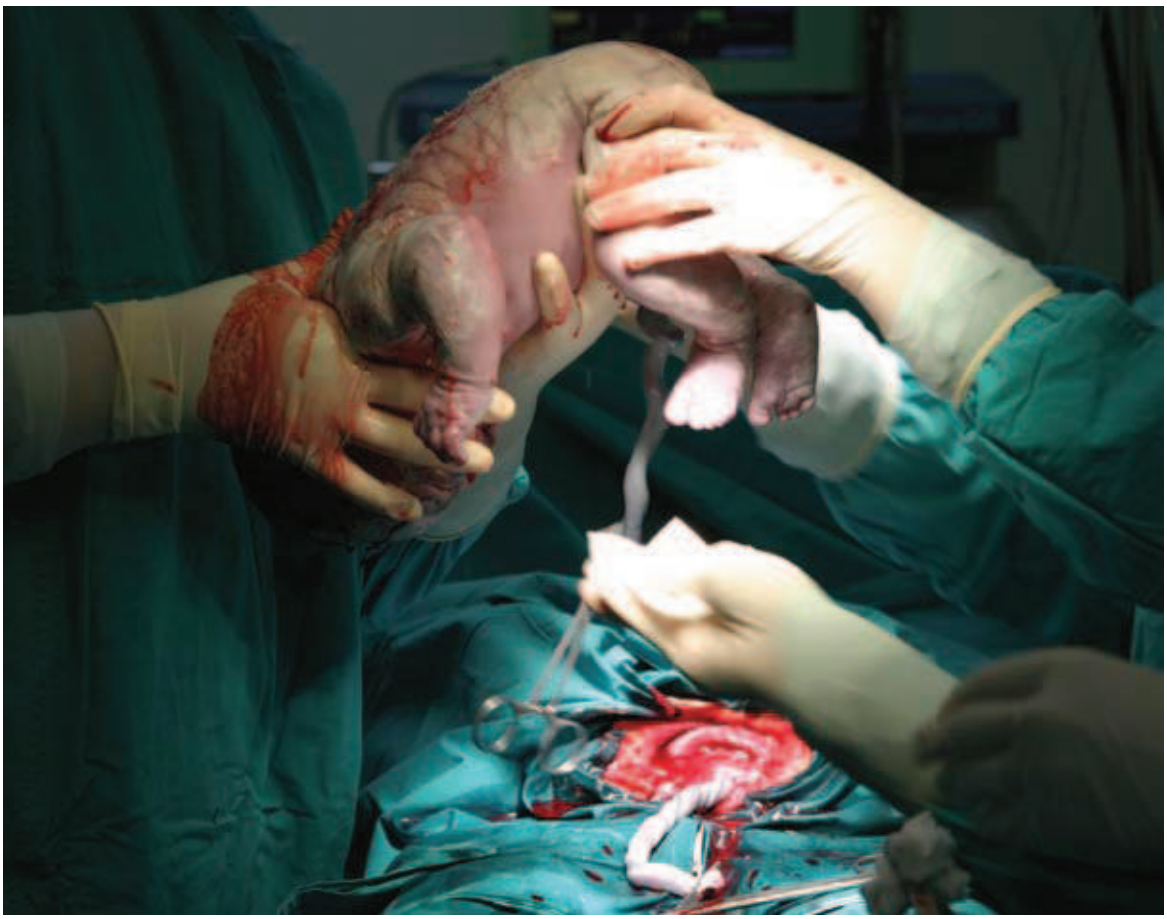
Gender: Male
Weight: 10.4 lbs
Height: 21 in
Apgar scores: 9 and 9
Additional: Nuchal cord x3; Old meconium with foul-smelling amniotic fluid

COUNTS

During a repeat cesarean section, four counts are performed. All counts include instruments, sharps and sponges:

- First/initial count—Prior to surgery.
- Second count—While the uterus is being closed.
- Third count—While the peritoneum is being closed.
- Fourth/final count—While the skin is being closed.

All counts were correct in this procedure.



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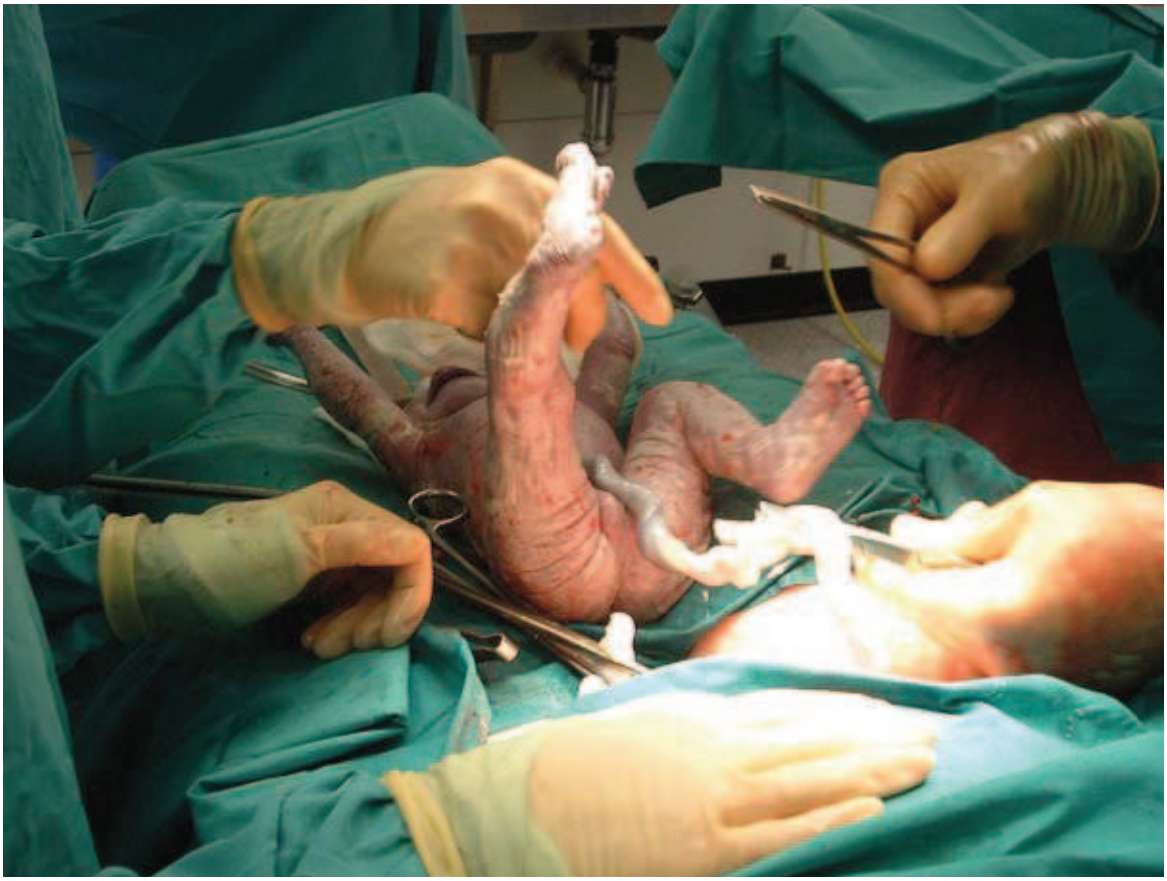

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DRAINS

No drains were placed.

SPECIAL CONSIDERATIONS

Due to the patient's size, extra surgical team members were needed to transfer the patient to the gurney after surgery.

COMPLICATIONS

There were no complications following this procedure.

Potential complications associated with cesarean section include hemorrhage, sepsis, injury to the surrounding structures, weakened uterus (which may necessitate cesarean sections for future pregnancies), pelvic inflammation, failed induction, toxemia, incompetent cervix, and hyperemesis gravidarum.

POSTOPERATIVE CARE

While in the postanesthesia care unit, the patient received two liters of oxygen, and vital signs were monitored.

The patient was restricted to bed rest for the first 24 hours postoperatively. The Foley catheter was discontinued 24 hours following surgery. Dressings were removed and changed 48 hours after surgery.

Prochlorperazine and metoclopramide was prescribed as needed for nausea. Meperidine was prescribed as needed for pain.

The patient was discharged from the hospital two days following surgery, with a follow-up appointment scheduled with her doctor in one week. The patient may follow a routine diet and take acetaminophen with codeine as needed for pain.

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ABOUT THE AUTHOR

Bryce Phillip Kiefer, CST, currently lives in Denver, Colorado. He is a recent graduate of San Joaquin Valley College in Fresno, California, where he wrote this article as a course requirement.

Editor's note: *Procedure-specific information was obtained with permission from the patient's medical chart and the surgeon's report.*

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