The cesarean section on Mary Hodges, Part 2

It is 1857, the infancy of anesthesia, and Dr Fifer finds himself the chloroformist during a cesarean section. As he struggles to keep his patient alive, he must contend with a lack of experience, scant scientific evidence, and no means to measure arterial blood pressure.

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At a time when velocipedes had become popular, a pediatrician bought a children's bike for his son's fifth birthday. The two-wheeler promptly, on the first day of use, had its tire punctured. Attending to the repair himself, having the bike's inner tube wrapped around his arm and inflating it to check for leaks, the sagacious disciple of Aesculapius became aware that higher inflation pressure would cause the wrist pulse to disappear. Attaching a mercury manometer and monitoring the cessation of the pulse were but a short step to noninvasive measurement of systolic blood pressure. Soon the device, initially unreliable for the constrictive effect of its narrow rubber tube, then improved by von Recklinghausen's postulate of a minimum bladder width, and refined by Korotkof's sound interpretation, was filling the gap in the need to measure the cardiovascular system. The effect on the practice of anesthesia was profound, elevating the discipline from arcane thaumaturgy to an exact science. The Velcro rubber cuff has made the sphygmomanometer the ubiquitous instrument of non-invasive monitoring of systolic and diastolic blood pressures, manual or computerized, analog or digital. Instead of "BP," the trite English language abbreviation of "blood pressure," physicians in many European countries use the acronym "RR," paying homage to their astute colleague, Dr Scipione Riva-Rocci, inventor of the sphygmomanometer.

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Dr Fifer practised medicine and surgery before the advent of the sphygmomanometer. Full of confidence in the newspaper reports, albeit cautiously, he proceeded with the preparations to chloroformize Mary Hodges.

Dr Fifer called at the pharmacy of Mr Leipnitz for the following items:

- Brown glass bottle, labelled *Merck's Trichloromethane*
- Skinner's wire mask
- Small amount of ricinus, castor oil
- Eye dropper

On intuition, to complement his anesthetic armamentarium, he bought one of the recently invented safety pins, unaware of the lifesaving role this insignificant gadget was to play.

At the Hodges's residence, he had instructed the maid that her mistress have nothing to eat for at least 4 hours before the operation, to prevent aspiration. He had some boards placed on top of the dining room table, the largest in the house. The servant brought comfortable head pillows and Mary, in strong labor, having gone without dinner, lay down. When she complained of heartburn, Fifer ordered salaeratus, baking soda, to reduce the corrosive acidity of the stomach juice; aspiration pneumonia, recognized as Mendelson's syndrome, has ever remained anesthesia's life-threatening difficulty. Without suction, unable to lower the head end of the table, and unaware of the benefit of cricoid pressure, he had no means of keeping the patient's throat clear to prevent aspiration,

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nor was he desirous or even conscious of the need for these adjuncts.

Dr Cooper arrived in his usual elaborate style, by four-wheeled landau. Handing top hat and coat to the Chinese assistant, he turned up his shirt sleeves while Fifer prepared Mary for the anesthetic. A number of patients, surviving surgery, had lost their vision due to corneal damage. A Schimmelbusch mask with a gutter to prevent spill, was not available; using Skinner's mask, he applied lard to the face, instilled castor oil into both eyes, and covered them with a strip of oil cloth to prevent post-anesthetic blindness.

The operation proceeds

Fifer pulled the cork from the chloroform bottle, cut two wedge-like channels along its opposing sides and replaced it; the groove at the bottom served as the outlet for the liquid, to fall drop by drop on the mask over the patient's face while the wedge cut at the top would allow air to enter and replace the fluid, ensuring an unimpeded flow. The anesthetist could increase the rate of drops by holding the container at a more vertical angle. Cautiously, Dr Fifer commenced the induction at 10 drops per minute. He had the patient hold the mask; she would loose her grip on it when anesthetized and thus avoid overdosing. To speed up the induction, he encouraged her "to blow the vapor away," causing her to take deeper breaths in the process. She reached the stage of excitation, becoming restless, trying to fight him in an uncoordinated struggle, grabbing his hands, thrashing her arms and legs, calling loudly for her mother and wanting to pull the mask off her face. She quieted at the increased rate of 20 drops, and her pupils began to dilate; with a fluff of lint Fifer tested the depth of the anesthetic, touching the sensitive edges of the eyelids, then the cornea; there was no reactive twitch. He advised the surgeon that she was deep enough for surgery to commence—or so he thought. However, in response to the surgeon's knife she drew up her knees, held her breath, and wiggled and squirmed, bucking and interfering with the surgeon's task. It became apparent that too little of the anesthetic would keep her too light. The surgeon, annoyed, requested bloodletting until fainting occurred, as a "salutary measure of muscle relaxation."

Rather, Dr Fifer increased the drop rate to 25 per minute; the patient went limp and ceased breathing altogether, her color turned to a dark cyan, with the pulse quite strong and fast. In observance of primum non nocere, he lifted the mask for a few breaths of room air, trusting the patient's resilience to survive the high concentration of chloroform; she started to breathe again, and her color returned.

"A face almost angelic," he thought, "Were it not for her short neck, the anesthetist's nightmare." Mary's even

features, framed by light brown hair, made her an attractive woman; in Dr Fifer's eyes, though, she was a prosaic sitting duck for anesthetic predicaments.

Promptly, she choked on her tongue. Dr Fifer removed the mask, pried her clenched teeth apart, and wiped away the frothy, bubbling saliva. With a piece of cloth he tried to get hold of the slippery, molluscan tongue; however, in a strong jaw spasm her teeth clamped down on his fingers to the bone. Dr Fifer called for the maid to bring a wooden spoon and, for the second time, to keep the cat out. He was able to extricate himself without breaking even one tooth, pull the tongue forward, pierce it with the safety pin, and attach a string for traction. The maneuver seemed to solve the problem; she was breathing! Alas, while struggling to clear her throat, he had to leave the mask off her face; like robbing Peter to pay Paul, she was breathing room air without benefit of the anaesthetizing vapor and woke up at the very moment when Dr Cooper was incising the peritoneum. She retched, gagged, and threw her head from side to side, and through the incised opening there disgorged the slippery, distended sausage-like loops of small bowel, copiously spilling over the table, compounding the surgeon's dilemma and depriving him of the respite for his Monte Christo.

Like Odysseus on his journey home from the Trojan War, faced with the choice of drowning in the maelstrom of Charybdis or being devoured by the monster Scylla, Fifer had the option of two equally dreadful alternatives. He would either have to fight a continuous struggle with the state of Mrs Hodges's apnea, the complete cessation of breathing, or contend with a patient who was near-awake, who needed to be restrained, and whose seesaw breathing and continuous hiccups made the surgeon's job most difficult.

The task to maintain an airway seemed Herculean. Finally, by the simple maneuver of removing the pillows, raising her jaw to a sniffing posture and applying moderate traction to the tongue, he managed to keep the airway clear and the respirations regular.

Dr Fifer was cautious in manipulating the head and the supple neck; carelessness could injure the brachial plexus, the bundle of nerves emerging at the neck level, leading to the arms. Some patients had experienced postoperative numbness, tingling, and even paralysis of their hands and fingers. By the time consciousness returned, neither doctor nor patient would associate the mysterious lameness with abdominal surgery or inhaled chloroform; the anesthetist, unaware of his maladroitness, would go scot-free.

Finally, at the rate of 20 drops, the patient's respirations were unimpeded and the pulse regular and of good quality. The patient had attained the desideratum of a state of continuous insensitivity and relaxation for abdominal surgery, Dr Snow's fourth degree of narcotism.

Misdiagnosis

The operation progressed favorably; Dr Cooper was able to scoop the escaped intestines back into the abdominal cavity, bring the pregnant uterus to the surface, and incise the fundus to free the babies. It became apparent that there was no twin pregnancy; only one large single male fetus was delivered, weighing well over 10 pounds. The newborn would not breathe. Flicking a finger against his soles, fanning air against the wet skin, a splash of cold water, rubbing the body, slapping and pinching the little buttocks, even inserting the tip of the little finger into his rectum and, as a last resort, breathing air into him, would not stimulate the newborn to take that primal gasp. The high dose of anesthetic, while superbly obtund-

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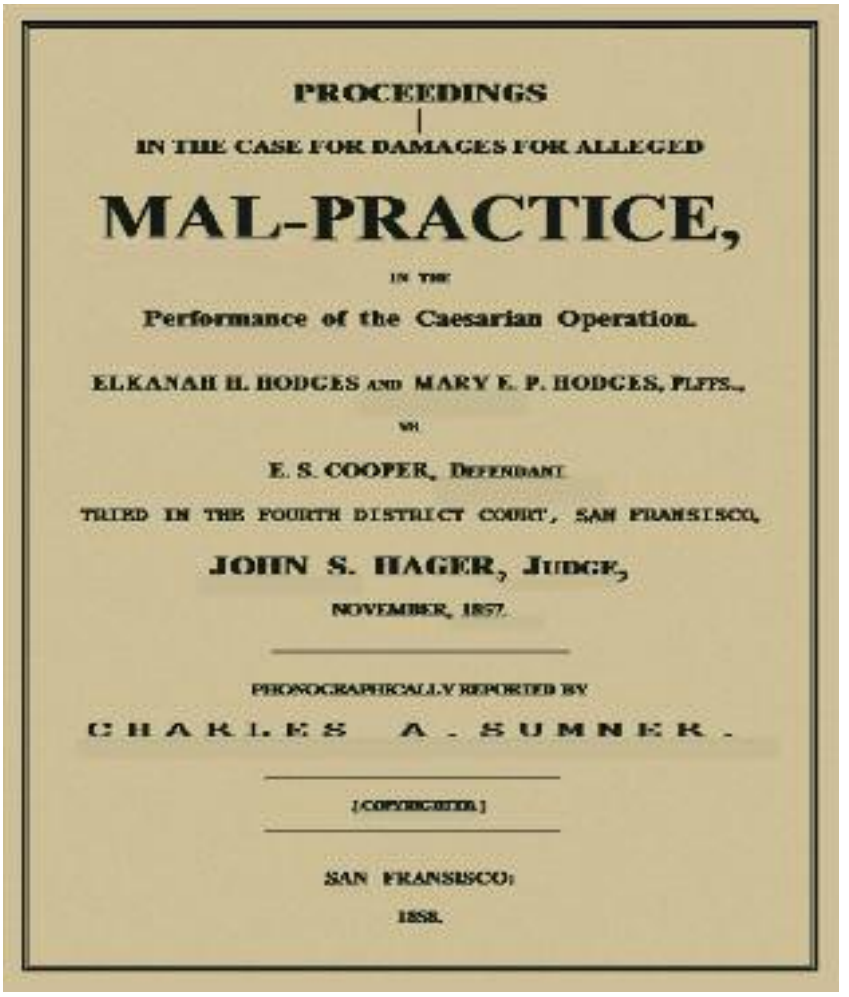
ing the mother, had killed the delicate fetus. The uterus contained a large amount of black meconium, indicating the baby's intrauterine agonal distress.

Facing the catastrophe, the instigator of the surgery had his answer ready. Without qualms, wiping his hands, relighting his cigar, he changed his story. "Mrs Hodges required surgery because of a contracted pelvis; her deformed birth canal precluded a normal, vaginal delivery."

Although he was wrong in his indictment of a contracted pelvis as indication for the surgery, a cesarean section would have been justified to save the baby, had it been alive. It was not a contracted pelvic outlet that obviated a vaginal delivery, it was the baby's large head. The cause of the deformity was the mother's diabetes; during the pregnancy, the fetus compensated for the mother's excess of glucose by converting it into increased intrauterine growth, mimicking a twin pregnancy. The resulting macrosomia, abnormal size and weight of the baby of 10 pounds instead of the normal 7, precluded the head's passage through the birth canal. During the last trimester, there was no attempt at measurement of the uterine fundus or sounding the fetal heart; a twin pregnancy would have been identifiable by two separate heart sounds.

Not all these facts were known, and Dr Fifer prudently remained silent; as the anesthetist and friend of the Hodges family he was deeply affected by the tragic outcome. Administering the anesthetic was intense work. At the conclusion of the operation, with a touch of jealousy, he realized that he had accomplished the crucial task of keeping the patient alive while Dr Cooper performed manual work on a temporarily inanimate body. He had consented in good faith to assume the demanding and dangerous task of administering an anesthetic under adverse circumstances in the belief that the lives of a mother and her twin



PROCEEDINGS

IN THE CASE FOR DAMAGES FOR ALLEGED

MAL-PRACTICE,

IN THE

Performance of the Caesarian Operation.

ELKANAH H. HODGES AND MARY E. P. HODGES, PLFFS.,

VS

E. S. COOPER, DEFENDANT.

TRIED IN THE FOURTH DISTRICT COURT, SAN FRANSISCO,

JOHN S. HAGER, JUDGE,

NOVEMBER, 1857.

PHONOGRAPHICALLY REPORTED BY

CHARLES A. SUMNER.

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SAN FRANSISCO:

1858.

babies were at stake; now he found that this was not so. He could hardly restrain his anger when he learned that he had been instrumental in a botched cesarean operation. As for the use of chloroform, he had learned his lesson; the agent was not as harmless as the newspapers would have it; while stillbirths were not uncommon then, the risky procedure had nearly cost the mother her life.

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ALLEGED PROFESSIONAL MISCONDUCT

Alta California, October 5, 1858

Elkanah H. Hodges and Mary E.P. Hodges, his wife, have commenced a suit in the Fourth District Court against E.S Cooper who performed the Caesarian (sic) operation upon the lady where it was unnecessary, uncalled for, and in every way reprehensible. They further allege that the operation was unskillfully performed, and has permanently injured the lady. They claim $25 000 damage.

* * *

In his operative report, Dr Cooper omitted the fetal loss and described the mother's progress: "A primigravida, aged 36, diagnosed as a twin pregnancy, was exhausted after 60 hours of labor with an occipito-posterior presentation. No progress followed the liberal use of ergot. We operated, Dr F. administering the anesthetic, I myself (Dr C.) using the knife. I incised parallel to the axis of the body, between

the rectus muscles. We found but one fetus, the one that had been in sight for 20 hours. It weighed 10 pounds, enough for two, but really only one. Postoperatively, after various changes and alterations between life and death, the patient finally recovered so as to be able to walk in about 40 days. During the first 20 days we visited her twice each day. The treatment was diaphoretics, aperients, opiates, carminatives, tonics, stimulants, etc., according to the symptoms. After the fourth day she had porter, California wine, bottled soda, eggs, small birds, mutton chops, loin steaks, rice, etc., as much as she desired..."

During the proceedings, Cooper's defence resulted in his disentanglement.

* * *

THE MALPRACTICE CASE
Alta California, October 20, 1858
The trial of Hodges vs. Dr E.S. Cooper was concluded this morning. At 5 o'clock yesterday afternoon, the jury, after a charge by Judge Hager, retired and were out all night. They were called in this morning at 10 o'clock, and on being asked if they had reached an agreement, the foreman replied that they had not, and there was no possibility of their agreement. It was stated that they stood this morning exactly as they did last evening, whereupon the judge ordered the plaintiffs to pay them $105 jury fees for eight days, &c., and the jury to be discharged. It is understood that they stood equally divided, six in favor of rendering judgment against the defendant, and six in favor of finding for him.

* * *

Dr Cooper seemed to have learned nothing from the experience. Requesting the floor at the next annual medical convention he tried to impress the audience by reading a paper on his achievement in the surgical art, that he had performed the first cesarean section in San Francisco, or even in all of California, and claiming that the operation was successful, omitting that the patient barely survived and the baby had died. Cooper enlarged upon his questionable accomplishment by publishing it through the local press and advertising an offer to teach other colleagues. His arrogance brought out strong reaction among the participants at the medical meeting. On the next day a colleague stood up and charged Dr Cooper openly for changing the diagnosis after the fact, from twin pregnancy to contracted pelvis, to justify a high-risk, unnecessary operation. The assembled medical society rejected Dr Cooper's publication as discreditable to their profession.

New Caledonia

Twelve months had passed; Dr Fifer, now practising in New Caledonia, was plodding home after attending to the confinement of Mrs Yorke of Yale. Despite his lack of sleep, a nippy October draft from the canyon kept him awake and elated, comparing the successful and happy birth accomplished during the night with the pathos of the failed cesarean section of a year ago.

Attending to the birth had been intense. By morning, when he arrived at his home, he was experiencing, as doctors ever do, the pleasant languor that follows a birth. Delivering the Yorke baby, the first non-aborigine child born on the shores of British Columbia's Fraser River, gave him a good feeling. Amidst the changing attitudes and opinions during the ongoing revolution in medicine, he had retained the compassion when a patient suffered, and shared in the joy of recovery, the timeless qualities of the healing art that reach beyond frontiers. Notwithstanding these thoughts, Dr Fifer fell to his cot and was soon fast asleep.