To Kris:
My wife and
my best friend

Stainless Steal Hearts

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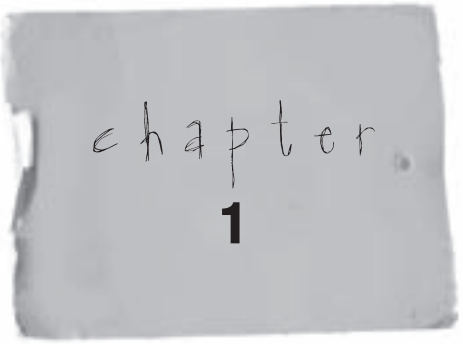

Matthew Stone's sleep was fitful. It wasn't the climate or the noise. Certainly his noisy apartment near the railroad back in Fairfax, Kentucky, had prepared him for anything less than a quiet environment for sleeping. No, it was his anticipation of the events of the following day that crowded sleep into the far corner of his mind, a mind that seemed full of a thousand other thoughts. Dr. Stone rolled over again, dimly aware that someone had started the diesel generator that provided the electricity in the operating theatre. The low, regular rumble of the engine pushed him into a state somewhere between sleep and alertness. Slapping feet hurriedly approached the door to the small cinderblock apartment that had been his home for the previous two months. A sharp knock at the door followed, and the bleary-eyed surgical resident muttered to himself, wishing he wouldn't have been so willing to volunteer for one last night of call prior to his departure. A small plane was to meet him at the landing strip at 7 A.M., and as his mind was clearing, he read the small alarm clock by his bed. 3:30. *So much for joyful, willing missionary service.*

The pounding on the thin, wooden door pushed the last hope of sleep away. The shrill tone of the voice that followed told Stone that an emergency had developed. "Dr. Stone, an expectant mother is bleeding! Please come to the theatre right away!"

Matt pulled on a shirt and pants and forced on his already-tied

Nike running shoes. As he opened the door, he was greeted by the cool night air of the Kenyan highlands. The young African attendant began speaking rapidly in broken but clear English, speaking mainly about how far the woman had traveled for help, who her father was . . .

Matt was used to cutting through the superfluous information so often given in an emergency. "What is the patient's blood pressure?" Stone spoke firmly and slowly, but not with harshness.

"We were unable to hear it, Dr. Stone. She appears to have been in labor for a long time, and there is much blood on her clothing!"

As they drew closer to the hospital, Matt was aware that he still became winded at the climb up from his small apartment. The altitude was over six thousand feet here, and the effect on his endurance was noticeable.

The makeshift theatre was lit by a dim, overhead fluorescent tube, the overlying shield long since broken or vanished. The overall atmosphere was spooky, with the dim, yellow light casting long shadows through the screened windows that were always open to the outside air.

A young girl was lying on her side on the operating table and groaning quietly with active labor. She appeared to be approximately sixteen, and this would be her third child, Matt would learn later. He felt her left wrist. A pulse was present, but it was weak and rapid—approximately one hundred and fifty times a minute. Her arms were bloody from multiple futile attempts at establishing an intravenous line.

A second attendant placed an oxygen mask on the patient at Dr. Stone's request. He looked at the surgeon and trembled as he stuttered, "We were unable to g-get the IV. Her v-veins are f-flat."

"Hand me a cut down tray and some iodine prep." Stone's voice cracked as he spoke. *Slow down, Stone! You've done this a hundred times!* He was still breathing hard from his run up the hill.

He made a small transverse incision just above the ankle in search of the patient's greater saphenous vein. The patient moaned, and Stone realized that in his haste he hadn't injected any local anesthetic. He

quickly administered 1 percent lidocaine into the open wound. *One centimeter cephalad and anterior to the medial malleolus. Just where it should be.* His actions were smooth and mechanical. He had harvested nearly fifty saphenous veins in a month's time during his last rotation on the cardiothoracic surgery service back in Fairfax, Kentucky. Of course, then the vein was used for coronary artery bypass grafting. Now he only wanted to find the vein in order to put in IV fluids. Using a knife, followed by a vein introducer, an opening was made in the vein, followed by a #14 gauge IV catheter. Within minutes, two liters of fluid were in, and the soon-to-be mother's blood pressure was up to a measurable range.

"Blood pressure one hundred ten." The attendant was noticeably calmer than during his trip up the hill.

The patient was repositioned on her back and her abdomen painted with an iodine preparation. Stone washed his hands at the single scrub sink. The water was piped in straight, unfiltered, from the nearby river, and its brown color made Stone wonder if it did any good to scrub at all.

Hurriedly, Dr. Stone and his assistant donned sterile gowns and gloves. Stone then placed sterile drapes around the patient's swollen abdomen.

This time Stone did not forget the local anesthetic.

"Lidocaine!" The drug was introduced along a straight line from navel to pubis. A scalpel quietly parted the flesh along the same line.

"More local." The fascia was infiltrated with more anesthetic.

The fascia and peritoneum overlying the uterus were then divided, and the uterus bulged into the operating field.

"Please give the ketamine now . . . in the IV." Stone worked quickly to open the uterus and deliver the baby before the drug could affect the small newborn. Skillfully he guided the infant's head through the freshly divided uterine muscle. The mouth and nose of the infant were suctioned, the body of the infant soon removed, and the umbilical cord clamped.

"It's a boy!" Stone was sweating despite the temperature, a cool 55 degrees Fahrenheit because of the altitude.

He neatly repaired the uterus, then closed the fascia and the skin. In the U.S. he would have stapled the skin, but here in this small missionary compound nearly everything was done by hand.

The mother named her child according to her tribal tradition. In the Kipsigis tribe, each boy is Kip and each girl is Chep, followed by the time of day the infant was born. Kip Rotich is a male infant born when the cows are going out in the morning; Chep Koech is a female infant born in the afternoon when the cows are coming in. This child became Kip Chirchir, which meant, "the time when everyone ran around in a hurry."

Stone laughed when he heard the name, remembering how quickly he had run up the hill and how tired he had become. He silently promised himself that he would start jogging again when he returned to the U.S. to continue surgical residency.

The sun was beginning to rise as the young doctor headed back down to his small apartment. Although his accommodations were meager—containing only a single bed, one cupboard, a sink, and a gas stove—he lived in luxury compared to the tribal people whom he served. After visiting several of the local mud huts, all of which had thatched roofs and a raised, open fireplace for cooking, he remembered thinking the scene was comparable to camping for your entire life. Much of the Kenyans' time was spent gathering wood for cooking fires and tending their small plots of corn, which they prepared as gimyet. Stone had found no acceptable U.S. equivalent to this dish, except maybe cornmeal mush, which represented a thin version of the African staple. Even with his Appalachian Kentucky upbringing, Stone had to force himself to eat this thick, white substance in hopes of appearing grateful to his generous native hosts.

The time on his alarm clock now read 5:30. *Just enough time to sleep for another forty-five minutes.* This time his sleep was sound. Even with all the excitement of the day to come, a herd of elephants couldn't have disturbed him.

To say that Michael Simons, M.D. was arrogant was an understatement. Arrogance, he felt, was an appropriate quality for someone of his stature. As the chief of the division of cardiothoracic surgery at Taft University Medical Center and vice-chairman of the whole surgery department, he prided himself on the accomplishments of his first thirty-nine years. His arrogance, however, didn't hinder him from his unending quest for knowledge. "Knowledge is power," he often exhorted his residents, "power that will propel you to do great things for your fellowman." Of course, most of his residents rolled their eyes behind his back, but they quietly and with almost complete sincerity acknowledged his words to his face.

Today Simons, a pediatric cardiothoracic surgeon, was continuing his search for better and innovative surgical therapies. His specialty, the surgical treatment of congenital heart disease, was often rewarding and heartbreaking. Never was Simons' search for increasing knowledge more apparent than in the time period just following a death on his service. Today was such a day, and the surgeon moved along the hospital corridor in contemplative silence.

When he reached the pathology lab, he opened the large, metal door. In the back room a pathologist was diligently performing an autopsy dissection. The subject, a two-week-old male, dead after a complex operation to correct an underdeveloped left ventricle, lay completely exposed on the metal exam table. Whenever an autopsy took place on one of his patients, Dr. Simons was present.

Simons listened quietly as the pathologist listed his findings. The pathologist spoke slowly and spelled many of the terms so that his inexperienced transcriptionist would get everything perfect. "The heart is enlarged due to dilation of the right atrium and ventricle. Period. The left ventricle is underdeveloped, and the aortic valve is atretic; that's a-t-r-e-t-i-c. Period. The ascending aorta is underdeveloped and measures only 0.5 cm. in diameter. Period. The ductus—that's d-u-c-t-u-s—arteriosus—that's a-r-t-e-r-i-o-s-u-s—has been surgically divided

and ligated. Period. The right subclavian—that's s-u-b-c-l-a-v-i-a-n—artery has been surgically transected and anastomosed to the right pulmonary artery. Period . . ."

Simons sighed as the pathologist continued. *There do not seem to be any answers here. He can only tell me what I already know!* Simons seemed heavy with the knowledge that his field held only partial solutions, with many operations being performed for palliation only and not for cure. In a few minutes the pathologist finished his description, and Simons began to pace around the small laboratory.

In the corner, working diligently at the counter, a pathology resident, Dr. Scott Tanous, placed a small heart on the scales to obtain an accurate weight recording. Simons was immediately drawn to the small heart and began asking questions.

"Where did that come from?" Simons snapped without addressing the resident by name or introducing himself.

"Huh?" The startled resident looked up and, recognizing Dr. Simons, cleared his throat and straightened his posture. "Oh, it's the heart from a stillborn infant who was delivered only this morning. I'm just recording some of the data from the autopsy."

Simons took the small heart in his hands, holding it carefully as if it were a fragile object that would shatter if he held it too tightly. Tanous looked at Dr. Simons with curiosity.

Simons spoke again. "How old was the child?"

"Twenty-three weeks gestation," Tanous answered, staring at the inquisitive attending surgeon.

"Why was it stillborn?"

"Multiple congenital neural defects," Tanous replied. "The heart looks okay, though."

Simons stared at the small, perfect heart in his hands, slowly turning it back and forth. "This heart is only a few grams smaller than the one in the patient whom I just operated on," Simons stated with a remorseful monotone, nodding his head in the direction of the remains of his patient on the table in the center of the room.

Tanous could see that the surgeon was deep in contemplation,

but he had difficulty discerning Simons' thoughts. Suddenly Simons straightened up and handed the small heart to the pathology resident.

"How many hearts like this do you deal with in a month's time?"

Tanous looked up into Simons' eyes, which seemed to be piercing right through his head. "I . . . I'm not sure . . . One, maybe two at the most," he stuttered. He paused, then added reflectively, "Fresh specimens of this age are fairly rare at the university hospital, sir."

It seemed as if a light had gone off within Simons' head. He turned and walked out of the lab without speaking.

As he passed, the pathology attending said, "I'll send you a full written report next week, Dr. Simons."

Again, Simons didn't acknowledge the communication. Greetings and salutations were not part of the time-efficient world of chief pediatric cardiothoracic surgeon Dr. Michael Simons.

The patient moaned softly as Dr. Adam Richards administered a local anesthetic medicine with a needle inserted under the skin of her swollen abdomen.

"Give her another milligram of Versed. I don't want her remembering this." Richards spoke mechanically to his nurse.

The nurse obeyed and slipped a needle into the IV line leading to the back of the patient's hand. Slowly she pushed another dose of the sedative medication.

"The Versed is in, doctor," the nurse replied, echoing the same monotone voice she had just heard.

Richards worked with the confidence that came with years of experience. No movements were wasted. Each one had been practiced hundreds of times before. Many patients came from West Virginia, Tennessee, and even Ohio just for the expertise that Dr. Richards offered. This patient, a thirty-four-year-old female, had sought treatment in Fairfax, Kentucky, by Dr. Richards simply because he was the best at what he did.

Richards removed the numbing needle and inserted a long needle through the abdominal wall and into the patient's uterus. He pulled back the plunger on the syringe he was using, then aspirated blood into the hub of the needle. Richards seemed irritated; he frowned and pulled the needle back one centimeter until clear fluid flowed into the syringe. *It really doesn't matter if the needle hits the fetus. It's only an abortion.*

"That's what we want." Richards spoke to his nurse and not to the patient, who snored loudly because of the sedative.

Richards drained the fluid from around the developing baby and replaced it with a concentrated salt solution.

The infant, now twenty-two weeks in gestation, would die a painful death over the next few hours. The mother would return to the Fairfax Family Planning Services Clinic in active labor the following day to deliver her stillborn male child.

While Matthew Stone slept, three slugs slowly climbed the wall of his bedroom to replace the three he had removed the morning before. This had become part of his morning routine and was one ritual for which he held particular distaste. The slugs were often four or five inches in length, and Matt often grimaced as if he had just taken a bite of a rotten apple. He thought his reaction would be different by now, after all the bloody trauma victims he had worked with, but somehow the slugs still affected him. He supposed that if Indiana Jones could have an aversion to snakes, Dr. Matt Stone could have the same response to these slimy creatures and not risk injuring his manly pride.

Certainly pride and conceit were common components of the successful surgical resident, but these qualities were not prominent in Matt Stone. Confidence, yes; that quality seemed to be necessary to anyone who is trained to make quick decisions and follow through with them. Perhaps his deep belief that Christ was at the center of any good thing he had in his life prevented his head from swelling.

Stone was of medium build and height, falling several inches short

of six feet. He had sandy blond hair and a frequent smile. He was naturally friendly, a trait that immediately endeared him to anxious new interns, and one that softened the calloused leadership role forced upon the senior surgical housestaff. He was now a fourth-year resident at Taft University Medical Center, having completed his medical school in Virginia. This rotation, a two-month elective at a mission hospital in western Kenya, was the result of hundreds of letters written to raise financial support, as well as months of schedule planning and hectic rotation swapping to be sure all of the university surgery teams were covered in his absence. When he returned, he would begin his fifth and final year of surgical residency, his chief residency year.

He had scheduled his trip as tightly as possible and planned to arrive back in Fairfax the evening before he was to be back on call at T.U. If all his connecting flights were on time, if the runway in Kericho was open, if the Landrover did not get caught in the mud, if he could get his money exchanged . . . he would be back in the U.S. with enough time to have eight hours of sleep before his first trauma surgery call night. These were the thoughts that had interrupted his sleep as he retired the night before.

His alarm sounded. 6:15 A.M. Matt forced himself up and stood on the cool cement floor. The slugs were now at eye level, and although he saw them, he decided that this morning he would leave the ritual for someone else. He smiled. "Good morning, fellas." Matt washed his hair in the small sink with the same brown water he had used for the past two months. *It's a wonder my hair isn't completely brown by now.* He was dressed and packed within twenty minutes. He checked his tickets for the sixth time prior to walking up the path to meet a Landrover that would take him to the Kericho airstrip.

Despite the early hour, six of the "full-timers" had gathered for his send-off. Adverse circumstances or hardships such as these people faced every day welded friendships quickly. Matt knew he would never forget the time he had spent with these special friends. Dr. Bates, the first doctor this hospital had ever had, had toiled alone in his efforts for six years, beginning in 1959. He was a true medicine generalist

as opposed to the hyper-subspecialists seen so frequently in today's medicine. He was just as comfortable setting a femur fracture as he was removing a bladder stone or treating the frequent cases of malaria. It was Dr. Ernie Bates who spoke first.

"Thanks so much for your time and efforts. You are welcome here anytime." He extended his right hand and then gave Matt a bear hug.

"Do come back. We'll miss you." The voice belonged to Melissa Schaeffer, a nurse who had been in western Kenya for five years with her husband, Ray, who was helping with local agriculture and cattle farming.

Other greetings were passed along with many handshakes and hugs. The staff here was used to many short-term missionaries coming and going. Matt would not forget their kindness. Matt hopped into the Landrover, but not before checking his tickets for the seventh time. He hadn't gotten this far without being compulsive.

A gentle rain began to fall, making the dirt road even more treacherous than before. They only got stuck once, but with the help of two strong Africans from a passing tea truck their delay only lasted several minutes. The driver was Paul Stevens, a quiet man who was working on a hydroelectric dam project that the mission hospital hoped would provide electricity full-time within the next five years. Paul's parents had been in Africa for thirty years, and he had returned after receiving his Master's degree at M.I.T.

The grass airstrip at Kericho was open, and a small Cessna 170 landed only minutes after their arrival. The Cessna was provided by African Inland Mission Air Service, and on this trip a couple was being brought from Nairobi to help with the work, just as Matt had done. As the couple exited the plane, they looked wide-eyed at the appearance of the muddy Landrover that would be their taxi for the next two or three hours. The man, Aaron Peal, was a pathologist who had spent several years in a surgical residency himself. He had hopes of setting up a more reliable blood banking system for the mission hospital.

The pilot seemed to be in a hurry to beat the upcoming storm sys-

tem, so bags were quickly unpacked from and packed into the plane. After a short prayer, Matt checked the location of his tickets an eighth time, and the Cessna sped off down the grassy runway.

The flight was uneventful, and the views of the Rift Valley were not disappointing. The time from takeoff to landing was one hour, twenty minutes. That gave Matt four hours to get his money changed and find something to eat prior to leaving on KLM for Amsterdam. In typical fashion, however, the bank closed for thirty minutes to count the cash obtained in the morning's trading. This occurred just as Matt was nearing the front of the line. The young woman in front of him was visibly and verbally agitated, asking loudly if there was a drinking fountain in the building so she could take her necessary Valium. Matt suspected this must be her first experience at such a location and thought that after her stay she might be a bit more patient with the system. Matt smiled at the hopeful thought. The young lady did not return the smile and only marched off in search of a fountain.

Two hours and two more ticket checks later, Matt sat next to a window on a KLM Boeing 747 Jetliner. At last his anxiety over this trip was easing, and he was seeing the reality of his tight schedule falling into place. He wondered how much more he would have to endure before he really understood the reality of Philippians 4:6-7. *"Do not be anxious about anything."* Matt closed his eyes. *"In everything, by prayer and petition, with thanksgiving, present your requests to God."* Matt's head pressed gently into his headrest as the plane raced down the runway. His grip on the arm of his chair loosened as he drifted off to sleep, the first time he had ever done so during a takeoff.