## Chapter 2 Showdown in the OR

## Without change there is no innovation, creativity, or incentive for improvement. Those who initiate change will have a better opportunity to manage the change that is inevitable. William Pollard

It was the thin, glassy whine of the drill that got the orthopedist's attention, alerting him to my departure from the usual script. A collegial but curt man a head shorter than I, Dr. S. was partnering with me on a cervical spine surgery that day. Hunched down at the patient's hip with one of my two neurosurgical fellows, Ian Kalfas, he was chiseling out a shard of bone from the back of the ilium, which would be used to fuse the spine later in the surgery. I worked up at the neck where the dislocation was, with my other neurosurgical fellow, Stephen Papadopoulos, across from me. Except for the two exposed areas of his body where we probed and drilled, the patient lay submerged face down in a sea of sterile blue cloth. His head clamped between Mayfield tongs and his eyes taped shut, he was long oblivious to the network of tubes and machines that sighed and sucked and beeped around him.

Steve Papadopoulos had completed the prep on the skewed spine, slicing a 3-inch incision at the back of the neck with a # 15 scalpel, then separating the meaty muscle and tissue from the bone with the hot blade of an electric Bovie knife. He worked down until he reached the thick periosteum membrane covering the bone. A few more minutes of delicate chiseling, and the cervical vertebrae gleamed a pearly white through the bloody mass. Using a scissor-handled, tong-like retractor, Steve dug the tines in, spread the sides of the wound apart, and locked the device in place.

The Bovie had cauterized the raw muscle, searing it like meat in a pan and slowing the flow of blood into the wound. Now Steve took over the suction hose, pecking at the seepage like a scavenging bird while I leaned in. There was the break in the normally interlocking column, the errant facet joint of the seventh vertebrae—C7—riding up on its neighbor C6 on one end, and biting into the spinal cord like a sharp incisor on the other. I put a clamp on the spiny processes of C6 and C7—the small bony knobs that rise up in the middle of the spine—and gently pulled the dislocated facet joint back in line with its neighbors. That did it. C7 slid back under C-6, relieving the pinch on the spinal cord. The neurosurgical part of the surgery should have been all but finished.

Normally, having aligned the vertebrae, we would have wrapped some 18-gauge wire around the spinal processes and then turned it over to the orthopedist. We may not have even stayed while the orthopedist completed the fusion, laying the shards of hipbone over the lamina. But today was not a normal day. Today we weren't following the conventional route.

Instead of the wires, Steve and I carefully positioned new instrumentation—two small, steel plates resembling part of a doorhinge package—over the re-aligned section of spine. Dr. S. was still gathering bone and could not see what we were doing amid the press of blue-sheathed bodies, the surgical tray and sterile draping. Once the plates were positioned, Steve held them fixed while, as if penciling in where a nail might go on a wall, I marked with a purple pen where the entry holes for four screws would be drilled. I paused for a couple of seconds, shot a look at Steve, and took the drill; it was a tool that up to now, in a spine case, had been used exclusively by orthopedists. I quickly roughened up the lamina between the spiny processes—to get it to bleed so it would fuse with the farmed iliac bone. Ordinarily the orthopedist would have handled that step too, not the neurosurgeons, but what Steve and I were about to do made it necessary. Then I quickly drilled two shallow pilot holes on Steve's side, where the lamina flattens out into the thick, horizontal lateral mass. That's as far as I got before the lid flew off the cooker.

At the sound of the drill, Dr. S. jerked his head up, as if he'd been shot. "What are you doing?" he said.

"We are going to put lateral mass plates in," I responded, looking up.

The strip of his face visible above the mask flushed a bronzy red. He stepped over, shouldering Steve to the side, and peered into the cavity where the spine rose from the tissue like a halfexcavated fossil. His forehead was barely half a foot from my nose. I could practically feel the heat radiating off him.

"Why are you doing that?" he said. "Wires work perfect in this kind of case."

"The plates will work better for this patient."

He pivoted away from the table and ripped off his bloodsplotched gloves. "Take me off the record," he said, striding towards the door. "And take me off the op note. I don't want to have anything to do with this case."

The doors whooshed back in, then out, then in, before coming to rest with a little thwump. I looked at Steve. His eyebrows had shot up around his hairline, but he had resumed his place across from me.

"Chiefy," I said, "drill the next two holes. We've got something to accomplish here."