

Old Neck Fracture

BY KEVIN M. MILLER, MD

It was hard for me to pick a single case that stands out as the most difficult I have ever encountered. Many cases in my career have been challenging for a variety of reasons, but one a few years ago forced me to think outside the box.

PATIENT'S HISTORY

In 2007, a 76-year-old man with a visually significant cataract in his right eye came to see me at the UCLA Jules Stein Eye Institute and requested cataract surgery. His medical history was notable for ankylosing spondylitis and a severe neck deformity. He had injured his neck in a fall in the 1980s and had a facedown posture at the time of presentation (Figure 1). The patient had been scheduled for cataract surgery elsewhere, but the procedure was cancelled in the OR, because he could not be positioned beneath an operating microscope.

CLINICAL FINDINGS

In my examination lane, the patient could not place his chin on the chin rest of a slit-lamp biomicroscope. An external examination demonstrated a marked deformity of the neck and a rigid head-down posture. The patient was unable to extend his neck, even with great effort, because of the fracture deformity. He had no significant kyphoscoliosis, and his back was relatively supple.

The patient's BCVA at the time of presentation was counting fingers at 6 feet in his right eye and 20/70 in his left eye. Retinoscopy and direct ophthalmoscopy were the best ways to view the cataracts, since slit-lamp biomicroscopy



Figure 1. The angle between the patient's neck and thoracic spine is approximately 90°.

was not possible. Both eyes had moderately dense nuclear and cortical cataracts.

This was not my first case involving a positioning challenge, as the following two examples will illustrate. In the early 1990s, a resident at UCLA asked if I would attend him on cataract surgery for a patient with "breathing problems." I said, "Sure," thinking how I operated on patients with breathing problems all the time. When I met the 44-year-old patient in the OR for the first time (big mistake), I found out that she had myotonic dystrophy and severe interstitial lung disease. She could not recline more than 15° from the vertical without becoming severely dyspneic. She lived day and night sitting bolt upright and wearing an oxygen mask. Since general anesthesia was not an option, and because she was blind bilaterally from severe corticosteroid-induced cataracts, I decided to do something I had never done before. The resident and I performed her cataract operation standing at her side while she sat bolt upright on the operating table. We used magnifying loupes and fiber optic headlamp illuminators for visualization instead of the usual operating microscope. The excellent red reflex provided by the coaxial headlamps and the surgical control provided by bracing the operating hand against her cheek made this approach work.¹

A more relevant case presented a few years later. An 80-year-old patient had severe kyphosis and visually significant cataracts in both eyes. He had been scheduled for cataract surgery, but it was cancelled in the surgery center when he could not be positioned beneath an operating microscope. On examination, the patient could not elevate his head beyond a position 30° below the horizontal. I performed his cataract surgeries by padding the operating table with 11 pillows under his buttocks and legs and three pillows beneath his head and neck. I also positioned the operating table in maximum Trendelenburg to obtain an adequate red reflex. Both of his cataract surgeries went well.²

SURGICAL COURSE

Based on the earlier cases I have described, I performed surgery for the current patient in a similar but more aggressive manner. First, I placed approximately 25 to 30 pillows beneath his legs and buttocks. Then, I placed a single pillow and towel beneath his head (Figure 2). With the table in Trendelenburg, this arrangement lifted the patient's torso, buttocks, and legs high into the air so that his body was at



Figure 2. The patient undergoes preparation with povidone-iodine. Note the number of pillows used to elevate his torso, buttocks, and legs above his head and neck.

a 50° to 60° incline to the floor. His head was tilted 35° to 40° downward, which was adequate for me to visualize his eye beneath the operating microscope. Numerous long strips of tape secured the pillows and patient so that none would fall, shoot out, or roll off the table!

OUTCOME

Surgery proceeded uneventfully (Figures 3 and 4). After recovery, the BCVA of the patient's operated right eye was 20/20. He had been comfortable during surgery and was very pleased with the result. I wish now, out of curiosity, that I had measured his IOP before the start of surgery.

LESSONS LEARNED

First, I think it is important that we surgeons step back for a moment and forget our comfortable routine when patients such as the one in this case come along. We should forget we know anything about cataract surgery and treat the problem in front of us as an engineering problem. In other words, we must think outside the box. If we need to get an eyeball beneath an operating microscope, but the head, neck, and back attached to it are all messed up, how can we accomplish our goal? Pillows and tape were available to me in this particular case, so they are what I used.

Second, it is important to plan ahead. Successful surgery starts before the surgeon and the patient reach the OR. This statement is true of all patients and all procedures, but it is particularly true of patients with special needs. If I had not ordered all of the pillows in advance of surgery, they would not have been there on the day I needed them.

This case example demonstrates that patients with extreme neck deformities can be positioned for successful cataract surgery. I recommend using as many pillows as needed to angle the body such that the patient's head is under the operating microscope. The patient's head does not have to be flat to the plane of the microscope objective, although this is ideal. It only has to be flat enough to give



Figure 3. After draping, Dr. Miller moves the microscope into position.



Figure 4. Dr. Miller performs phacoemulsification. The patient was comfortable throughout the cataract procedure.

the surgeon a comfortable view. The patient and pillows should be secured to the operating table with cloth tape that will not release or tear easily. These simple tools can turn a seemingly impossible engineering problem into one that can be managed with little extra effort. The elevated IOP that results from positioning the center of the mass of the body above the head can be counteracted by raising the irrigating bottle appropriately and by ensuring a relatively watertight incision. ■

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2. Gordon MI, Rodriguez AA, Olson MD, Miller KM. Pillow case. *J Cataract Refract Surg.* 2005;31:1824-1825.