
Phacoemulsification performed in a modified waiting room chair

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ABSTRACT

Patients unable to fully recline represent challenging cases for the cataract surgeon. Various diseases of the heart, lungs, and spine may prevent certain patients from assuming a supine position, complicating the surgical approach and increasing the risk of intraoperative complications. We altered a common waiting room chair to allow these patients to remain in an upright seated position while their heads maintain the usual supine position commonly obtained with patients positioned on an operating room table. *J Cataract Refract Surg* 1996; 22:1408-1410

Certain diseases, including chronic obstructive pulmonary disease, congestive heart failure, kyphosis, and some forms of arthritides, can make it almost impossible for patients to assume a supine position. Rimmer and Miller¹ reported on a case of phacoemulsification performed in the standing position. They used loupe magnification and headlamp illumination to remove a cataract in a patient unable to recline because of myotonic dystrophy and advanced interstitial lung disease. Other surgeons have also reported performing standing phacoemulsification using the operating microscope in patients unable to recline fully.^{2,3}

Unfortunately, positioning a patient in a seated or partially reclined position creates an abnormal angle of approach for the operating room microscope, which results in difficulty focusing and manipulating tissues and instruments intraocularly. Also, with the head in an upright position, gravity causes shallowing of the anterior chamber, moving both the posterior capsule and the vitreous forward. This creates a greater risk of damaging the cornea and the posterior capsule during the procedure.

Surgical Technique

We have attempted to address these problems by altering (for less than \$200) a waiting room chair to enable these patients to remain in an upright seated position and place their head back so that surgery can be performed in the usual head position obtained in the supine position on an operating room table.

Figures 1 and 2 show a waiting room chair that has been altered by mobilizing the pad between the upright supports so that it can be reclined on adjustable brackets. A head rest was constructed so that it could be attached to the back of the chair and was fully adjustable (Figure 3). This allows the patient to remain upright and tilt the head back with full support. The chair has been lowered, allowing the patient to stretch his or her legs out in front to counterbalance the tilted position of the back and head. In addition, a spindle has been added to a strut between the two front legs of the chair so that barbell weights can be placed to add stability to the system (Figures 4 and 5).

Discussion

We have used the modified chair to perform surgery on approximately 10 patients with chronic obstructive pulmonary disease or claustrophobia. We also used it for one patient with a chest wall deformity contributing to respiratory difficulties. The nurses in the surgical suite

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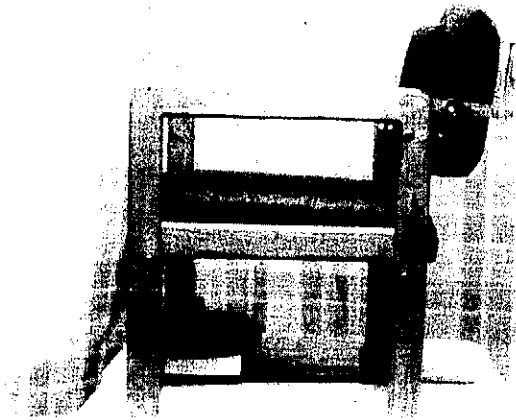


Figure 1. (Fine) Waiting room chair (in upright position) altered by placing back cushion of chair on adjustable brackets. The legs were shortened and the head rest clamp was attached to back of chair. A spindle for counterbalance weight is attached to base. Chair in upright position.

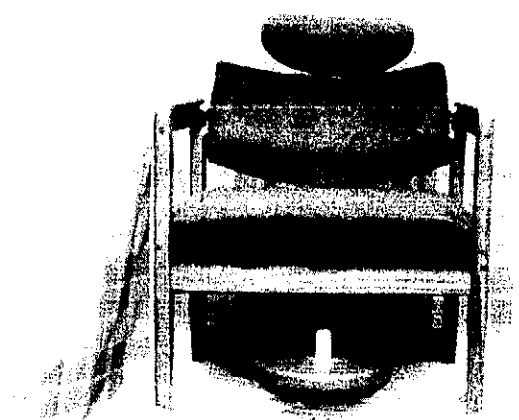


Figure 4. (Fine) Front view of reclined chair with counterbalance weight between front legs.

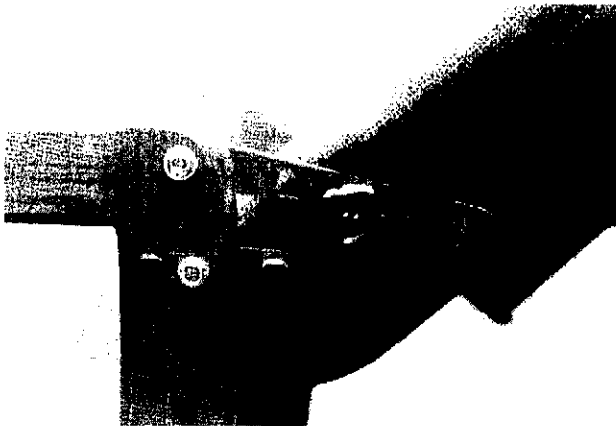


Figure 2. (Fine) Magnified view of back cushion adjustable brackets, with the chair back reclined.

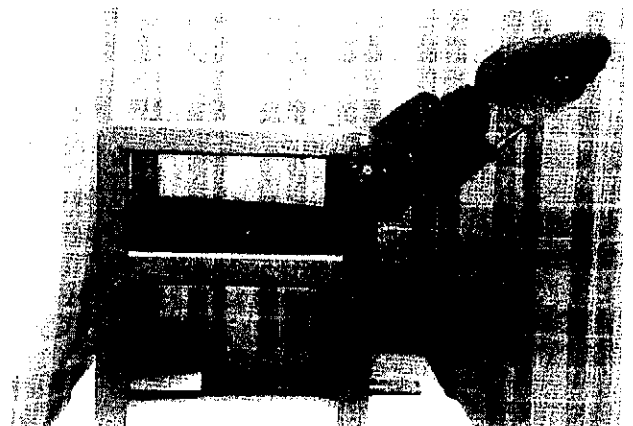


Figure 5. (Fine) Side view of reclined chair.

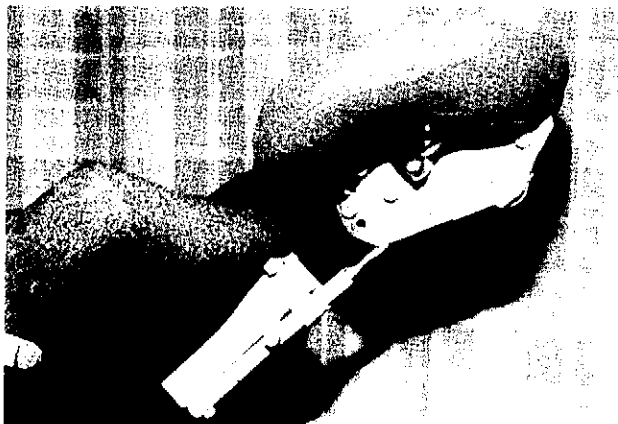


Figure 3. (Fine) Removable and adjustable head rest and head rest clamp.

carefully position patients to provide good back support. Thus, no patient has had difficulty with his or her head being extended during surgery.

No patient experienced difficulties during the procedure, and all surgeries were uneventful. In some cases, the surgeon found the procedure somewhat easier because there was no limitation in access to the head. In all cases, patients were free of some of the congestive and anoxic symptoms they had in a supine position (Figure 6). In addition, their positive experience led to high satisfaction and their willingness to have surgery in their contralateral eye.

In one patient with severe claustrophobia, we were able to do a full-face preparation. Although we used an aperture drape around the eye, we avoided draping the



Figure 6. (Fine) A patient with chronic obstructive pulmonary disease reclines comfortably in chair before having cataract surgery. The patient's legs are resting on foot stool.



Figure 7. (Fine) A claustrophobic patient having cataract surgery with partial eye drape sitting in a reclined chair.

rest of the face so that the sensation of being closed in was eliminated (Figure 7). One patient with severe emphysema rested her arms on a table in front of her during surgery, which helped her to breath.

Patients with kyphosis are usually placed on a surgical stretcher. They are positioned with pillows and rolled towels, and the bed is placed in the Trendelenburg position. These patients can be placed in the modified surgical chair if they are able to extend their neck.

We would recommend using the modified waiting room chair for patients who have trouble in a supine

position. We are considering altering our protocol to include some modifications of this chair for use in routine cases.

References

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3. Liu C. Phacoemulsification in a patient with torticollis (letter). *J Cataract Refract Surg* 1995; 21:364