

# Clinical Pearls, Pre-Operative Evaluation of the Mature Cataract

Monday, 17 January 2011 09:04 [Baxter McLendon](#)



Although rare, patients will present with mature cataracts, white or brunescent, in the United States. Mature cataracts, where the ophthalmic surgeon can not visualize the posterior pole, is a common initial presentation in the developing world.

The incidence of operative complications appears to be greater with mature cataracts as opposed to non-mature cataracts. However, the potential for greatly improving the patient's vision is a real possibility with removing mature cataracts. Making the blind see has enormous financial and emotional rewards for the patient and his family.

Ocular surveys in the developing world usually list cataracts as the leading cause of blindness. Unfortunately post-cataract operation blindness sometimes is the second leading cause of blindness. There are many reasons for this. Probably one reason for this is poor selection of pre-op cataract patients. All patients with mature cataract should not have cataract surgery.

The entopic phenomena can be helpful to determine a reasonable level of retinal function behind a mature cataract. Eliciting a positive result can sometimes be difficult. Many patients simply don't understand the test. Telling the patient what they are suppose to see before you ask them if they see anything certainly makes the test subjective. However, a positive response in a reliable patient can be helpful. A proper light source is required.

With a mature cataract a beta ultrasound can be done. The B-scan unit is usually not available in the developing world eye clinic. A B-scan will often make the diagnosis of retinal detachment, vitreous opacity (hemorrhage), some optic disc abnormalities (drusen,coloboma), posterior pole mass lesion, posterior staphyloma,and choroidal detachment (serous,hemorrhagic). The B-scan will often make the diagnosis but what is often needed is the prognosis. What is the likelihood if a mature cataract is removed successfully that the patient will gain vision?

When examining the pre-op mature cataract patient regarding prognosis, there are many things you would like NOT to see: phacodonesis,iridonesis,the edge of the cataract (equator) with a fully dilated pupil, abnormal anterior capsule, vitreous already in anterior chamber,ocular hypertension,hypotony,marked guttata, rubeosis,or other abnormal anterior segment blood vessels,iris retroillumination defects,missing/atrophic pupillary ruff. Getting an ocular history of an old eye injury with resultant permanent poor vision or having never seen well out of that eye is obviously useful information in deciding not to operate on that eye.

With a mature white or dense brown cataract, time should be spent pre-op to ensure a good prognosis following cataract extraction. A quick three step, 90 second, examination can be done

in the eye lane to ensure the likelihood of improving the vision after mature cataract extraction. If the patient "passes" this three step test, then a B-scan is not indicated.

The first step is to check for an afferent pupillary defect (APD). This should be done in dim illumination with the patient fixating at distance. Swinging a fairly bright light back and forth four or five times will often help bring out an APD not initially appreciated. Once the examiner has determined the other pupil is normal, attention should remain focused on the pupil with the mature cataract. You want to be watching the pupil when the light first strikes that eye. Testing for a near-light dissociation can sometimes be helpful.

The second step involves checking for good light projection. This is often best performed with the pupils at least partially dilated. Cover the other eye. The examination can be done by having the patient actually point in the direction of the light (nasally,temporally,up,etc.). Observing the ocular globe movements while moving the light will test light projection.

The third step, and you want to get this correct initially as you only get one chance, is to cut off the lights completely,cover the other eye, and shine a red light into the cataract eye. Ask the patient,"What's the color?". If the patient responds red, that's good. Orange or pink is usually acceptable. If the patient can not appreciate the color red, my advise is not to operate on that eye. You don't want the patient to see the red light/filter prior to performing the test. A red light can be made by placing a red filter over a flashlight. Many containers actually come with a red plastic lid which can be utilized. Flashlights with a red light are available.

This quick simple three step procedure can usually give you as much or more prognostic information as a B-scan concerning mature cataract extraction. No other equipment other than a red filter and a flashlight is needed. This three step procedure has been used in many developing countries and has proven extremely reliable in predicting post-op prognosis with white or brown cataracts. This three step test can readily be used in any eye lane.

Having the patient come back for various tests and procedures pre-op often results in the patient never having the cataract operation. If you can avoid having the patient come back for tests, then the patient is more likely to have the cataract operation and his vision restored.

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