

Flexible eye model takes the hardship out of patient education

Japanese nurses feel that allotting extra time for patient education ensures a much higher rate of patient satisfaction. In fact, the hospital team at Hara Eye Hospital, Utsunomiya, Japan went to great lengths to produce an oversized, flexible eye model to help improve patient education.

“Patients need to have procedures explained to them. For an even better patient understanding, the use of models is important since touching the models with their hands enhances their understanding,” said Kunihiko Fukuda, creator of the eye model.

Mr Fukuda told delegates at the ESONT meeting in London that patients were entitled to an adequate explanation regarding cataract surgery and IOL implantation. He said that patients coming to the Hara Eye Hospital for surgery were offered a seat in a separate room and were able to discuss their procedure with a nurse for an average of 35 minutes.

They also receive a pamphlet about the surgery they are scheduled to have. Available pamphlets include a 32-page leaflet on cataract surgery and IOL implantation, a 23-page leaflet on glaucoma, and a 31-page leaflet on vitreoretinal surgery. These describe procedures, complications and after-treatments in great detail, he said.

Patients receive the text on their first visit to hospital and take it home to read. On their next scheduled visit, patients meet their surgeon who briefly discusses the surgery with them. They then meet with a nurse and are encouraged to ask questions.

Once the patient understands the surgery to his own satisfaction, nurses review a poster of the eye and its anatomy with the patient. Mr Fukuda observed that he often may show 3-D computer graphics and videos, as it is imperative that the patient understands what he is seeing.

Nurses who attended Mr Fukuda's presentation were impressed by the amount of time that Japanese nurses invested for one-on-one patient education. Although vital to patient satisfaction, the reality was that not all hospital staff could afford to spend so much time for patient education, they said.

demonstrates how a taut capsule facilitates IOL implantation.

Glaucoma patients often have difficulty envisioning the steps involved in trabeculectomy surgery, Mr Fukuda noted. The eye model has a pre-cut, square conjunctival flap. Once flapped open, the patient can see the triangular scleral flap

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Mr Fukuda stressed that the use of models very much enhanced patient understanding, as touching the models with their own hands made things easier to comprehend. In order to show the location of tissues, such as the cornea, lens and retina, and clearly describe procedures, such as scleral flaps, incision techniques and lens removal, Mr Fukuda relies strongly on the use of eye models.

Since most of the many available eye models, however, are made of hard materials, and therefore are not realistic enough, Mr Fukuda created a new flexible eye model. The silicone eye model has a diameter of 24cm, which is 10 times larger than the actual eye. The model is soft, allowing you to demonstrate the softness of the eye tissues realistically.

Mr Fukuda's eye model not only replicates the eye exactly, but also includes pre-cut flaps, incision points, etc. allowing the patient to better understand anatomy and surgical processes. For instance, he can demonstrate the way a corneal flap is made in LASIK surgery, along with the hinge position, and show how it is flapped to one side using a forceps.

By removing the northern equator of the model eyeball and revealing the eye interior, Mr Fukuda and the ophthalmic nurses in his team have successfully shown patients the location of the lens capsule, capsulorhexis, the removal of the crystalline lens from within the bag, as well as IOL insertion, placement within the capsular bag and unfolding. The model allows an easy understanding of postoperative posterior capsule opacification (PCO) and Nd:YAG laser capsulotomy.

Mr Fukuda is presently developing a sharp-edged capsular ring model in order to help demonstrate capsular ring placement in the capsular bag, which helps avoid PCO. By keeping the bag taut, the model ring

beneath it. The nurse uses a model of a scleral graft to demonstrate graft insertion below the scleral flap. A further incision allows access to the anterior chamber and patients are shown the triangular iridectomy, and repositioning of the scleral and conjunctival flaps, once the surgery is completed. Patients readily grasp this surgery through the use of the model, Mr Fukuda noted.

Nurses use the lower hemisphere of the model globe to elucidate retinal detachment. The model's intraocular structures are made out of transparent silicone. By attaching a string to a point on the retina, nurses can show their patients how retinal traction comes about by tugging the string and seeing how the retina pulls away from the back of the eye. The model also facilitates understanding epiretinal membranes and scleral buckling. In addition, retinal patients are shown the chair and table used after intravitreal injection, which are vital to keep a stable position.

Nurses at Hara Eye Hospital attend continuing medical education lectures every year. These cover everything from the basics of ocular anatomy to colour sense education, optical pathways comprehension, and the steps involved in all relevant ocular surgeries. Lectures are two hours each, for a total of 50 hours per year. This puts them in a position to answer any questions their patients may have.

Mr Fukuda noted that the model was strong, resistant, and easily cleaned with soap and water. Although still in the experimental stage and currently undergoing improvements, he is hopeful that this eye model will be very popular in the future.

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