

# HKJO Quiz



Eye Unit at the Prince of Wales Hospital; Department of Ophthalmology and Visual Sciences, The Chinese University of Hong Kong  
Clement CY Tham, Dennis SC Lam, Alvin KH Kwok, Lingam Gopal

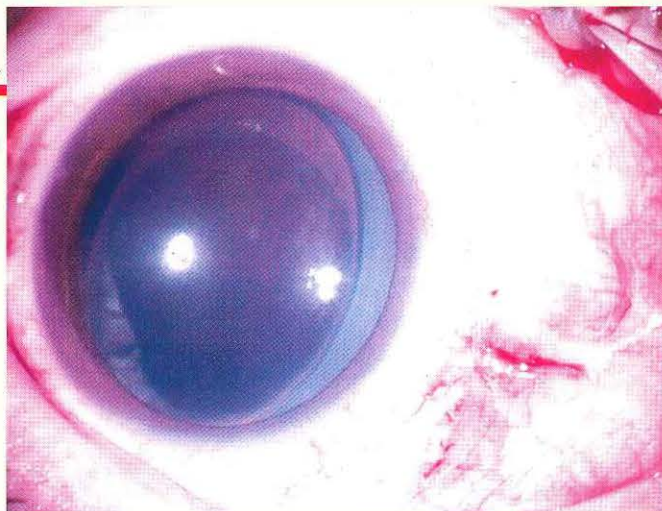
## Question

Figure 1.

A middle-aged highly-myopic female patient had had two previous failed retinal reattachment surgical operations. We planned a combined closed vitrectomy, membrane peeling, endodrainage, gas-fluid exchange and endolaser for her when she came to our attention. The operation proceeded very smoothly. Towards completion of the procedure, the anterior segment of her eye appeared as shown in Figure 1.

**What are the differential diagnoses?**

(Answer & discussion on page 18)



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### Answer

Figure 2.

Figure 1 shows a suspected lens subluxation or dislocation.<sup>1</sup> In this case, the differential diagnoses would include:

1. Pre-existing but undiagnosed subluxation of the lens, eg from primary or secondary ectopia lentis;<sup>2,3</sup>
2. Iatrogenic subluxation of the lens by the positive pressure effect of gas-fluid exchange in a normal procedure, on a background of pre-existing zonular weakness without prior lenticular subluxation;
3. Iatrogenic subluxation of the lens by a traumatic procedure;
4. Optical illusion from the intravitreal gas.

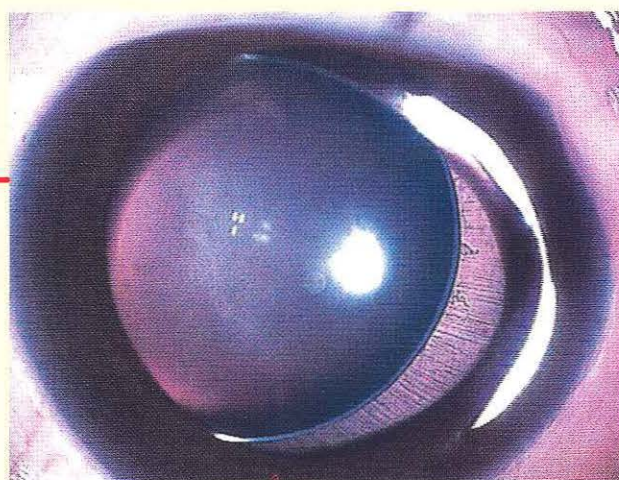
In our patient, optical illusion was the actual cause.

### Discussion

Differential diagnosis 1 above can be readily excluded by a comprehensive pre-operative assessment. Furthermore, this would have been easily noticed by the surgeon early on in the procedure.

Differential diagnoses 2 and 3 should also have been readily recognised by the surgeon during the procedure. Differential diagnosis 3 is also often associated with traumatic lenticular opacities that should be obvious.

Optical illusion mimicking a lens subluxation, as a result of intravitreal gas, is an often seen phenomenon among vitreoretinal surgeons. It is believed to be due to the casting of a shadow that mimics the lenticular margin and gives the false impression that the lens has subluxated, although the exact



optical mechanism has not been well described. To confirm this diagnosis, the position of the patient's eye can be changed. If it is an optical illusion, the impression alters with the change in eye position. Figure 2 shows an actual subluxated lens for comparison. With a subluxated lens, the impression remains the same with movement of the eye. Moreover, in the optical illusion, the zonules attached to the supposed margin of the lens will not be seen. In an actual subluxation, the zonules attached to the lens may or may not be seen, depending on the position of the zonular breakage site.<sup>4</sup> Overall, the most common cause of all lens dislocation or subluxation is trauma.<sup>5</sup>

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