The IOL scaffold is a useful new technique for preventing further complications and achieving a successful visual outcome after posterior capsular rupture (PCR), said Amar Agarwal MD, at the XXIX Congress of the ESCRS.

The procedure is intended for use in cases where PCR occurs with a non-emulsified, moderate to soft nucleus. It uses a three-piece foldable IOL as a scaffold or barrier to compartmentalise the anterior and posterior chambers, thereby preventing vitreous prolapse, vitreous hydration, and nucleus drop. Because the IOL is inserted through the existing corneal incision, the IOL scaffold technique has advantages for maintaining anterior chamber stability and IOP while also preserving the astigmatic benefit of sutureless, small incision surgery, said Prof Agarwal, chairman and managing director, Dr Agarwal’s Group of Eye Hospitals, Chennai, India.

“The word scaffold comes from the medieval Latin word squaldus that means temporary platform. In the IOL scaffold technique, the three-piece IOL is acting as a temporary platform or artificial posterior capsule, preventing nuclear fragments from falling into the vitreous cavity,” he explained.

“There are several other methods that surgeons can use to prevent nucleus drop after PCR, including the phaco sandwich, posterior assisted levitation using a Sheet’s glide, or Keiki Mehta’s HEMA life boat. However, the IOL scaffold is unique in that it is the only one in which the scaffold is the IOL itself and so allows the same IOL to be implanted into the sulcus after lens removal.”

The IOL scaffold technique can be used after the nucleus pieces have been brought into the anterior chamber, but it should be limited to the management of PCR in eyes with soft to moderate nuclei, considering the risk of corneal damage if the cataract is very hard, Prof Agarwal said.

In performing the technique, the first step is to adjust the infusion or fix an anterior chamber maintainer to prevent anterior chamber collapse. Then any vitreous that has prolapsed into the anterior chamber is removed by anterior vitrectomy. Next, the nuclear fragments are manoeuvred to lie above the iris in the anterior chamber. The IOL is introduced via the existing corneal incision and positioned beneath the nucleus with the leading haptic above the iris and the trailing haptic remaining just outside the incision. A dispersive viscoelastic is used to coat the cornea.

“Using a dialler in the non-dominant hand, the surgeon should manoeuvre the optic-haptic junction on the trailing haptic side so that the IOL blocks the pupil. Keeping the trailing haptic outside the incision also enables adjustment of the IOL position if the nucleus rotates while reducing the risk of IOL drop,” noted Prof Agarwal.

Once the IOL scaffold is established, the surgeon can proceed to remove the nuclear fragments using the phaco probe with low flow and vacuum settings. Any residual cortex is then removed using the vitrectomy probe in suction mode with low aspiration. The IOL is then manoeuvred over the capsular remnants in the ciliary sulcus. If capsular support is inadequate, a glued IOL procedure is performed. The infusion cannula/anterior chamber maintainer is removed, and the wound hydrated.

Postoperative treatment includes fluoroquinolone and corticosteroid drops four times daily for two weeks with a short-acting mydriatic drop twice daily for three days.

Dr Soosan Jacob, senior consultant, Dr Agarwal’s Group of Eye Hospitals, was also involved in carrying out the research mentioned in this article.