



How to avoid dropped nucleus during phaco

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- ▶ Lens is the natural barrier between contents of anterior and posterior segments of the eye
- ▶ Posterior capsular rupture is a potential complication during any phaco operation through which contents on both sides may mix
- ▶ vitreous may pass from pos. segment to anterior chamber decreasing the efficiency of lens emulsification and increasing the rate of postop. Complications
- ▶ Fortunately the majority of phaco surgeons can do anterior vitrectomy and complete the case safely

- ▶ on the other hand through a large post. capsular tear nuclear fragments may be pushed by irrigation fluid pressure to fall down in the posterior segment
 - ▶ it may cause postoperative uveitis and glaucoma that need posterior vitrectomy to remove the fallen nuclear parts
 - ▶ This changes the case from only anterior segment surgery to a complicated anterior and posterior segment surgery case
 - ▶ As the majority of phaco surgeons are only anterior segment Surgeons, removal of the dropped nuclear parts may need another operation by a posterior segment surgeon
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So we have to do our best effort to avoid dropping of nuclear parts through a posterior capsular tear



opposite incision & when to do

- ▶ is another main incision at opposite site through which we can change the probe direction to safely emulsify remaining **sub incision** nuclear parts in presence of large **lower posterior capsular tear**



When we need opposite incision

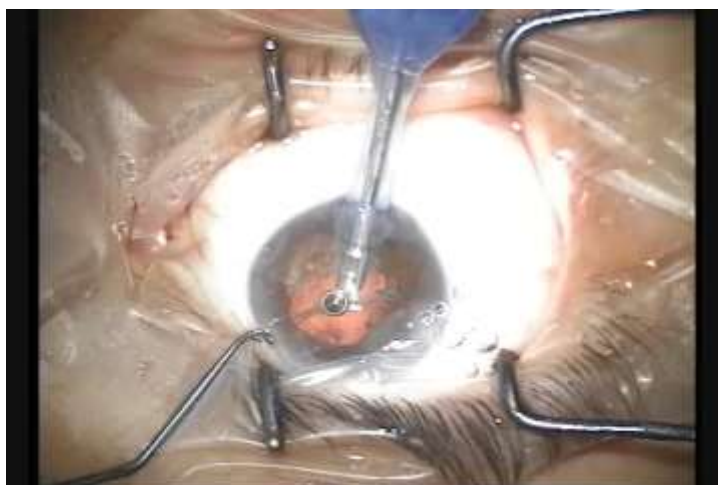
- ▶ Remaining sub incision last piece whether in bag or sulcus with the presence of large posterior capsular tear [video case 1, case 2]
- ▶ Lower wide posterior capsular tear through which the remaining upper part of nucleus may fall down on rotation for emulsification [video case 3]
- ▶ Falling down of lower part of the whole nucleus through a posterior capsular tear with the upper part still in bag



Opposite incision for removal of
last piece in bag + post. Capsular tear



sub incision in sulcus last piece+posterior capsular tear
opposite incision removal



In bag upper half with lower capsular tear ,opposite incision removal



Foldable 3 pieces of +3D was not available
 Hard IOL was implanted on rhexesis
 One stitch
 Refraction 1 month postop. was
 -1\ -1@90


Opposite incision

IOL power was +3D


Apposite incision for dropped nuc.



Discussion

- ▶ accidental touching the of posterior capsule by phaco probe usually causes a lower capsular tear
 - ▶ During phaco ,irrigation precedes aspiration and vacuum build up , this tends to push free nuclear particles away first before coming to the phaco tip increasing the chance of posterior dropping through the tear
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Discussion

- ▶ Changing the direction of the phaco probe through another opposite main incision solves the problem by emulsifying the remaining nucleus in the upper area with intact capsule
 - ▶ You do not need to change your setting position just change your hand position through the new opposite incision
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conclusion

in cases of large lower posterior capsular tear with impending dropped nuclear parts , doing another main opposite incision to change the probe direction helps safer removal of the remaining nucleus in area with intact capsule



Take home message

- ▶ Phaco is not only a one way one direction technique
- ▶ When the main road is obstructed or dangerous taking a side way may be safer to reach your target



Thank you

