Phacoemulsification tip fracture

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Key words: ABS tip, electron microscopy, instrument break in cataract surgery, phacoemulsification tip fracture

A 64-year-old man underwent phacoemulsification surgery in left eye for senile cataract with nuclear sclerosis grade 4 using Standard 20 gauge aspiration bypass system (ABS) phacoemulsification tip (Centurion, Alcon laboratories, Inc., Fort Worth, TX, USA). During phacoemulsification, sudden fracture of the flared titanium tip was noted while attempting chopping [Fig. 1a]. The broken end was removed while still inside the silicon sleeve [Fig. 1b]. There was no damage to ocular tissues. Anterior chamber was examined thoroughly under operating microscope and no broken piece was seen. This was confirmed by opposing the broken ends of the tip under the microscope, which matched perfectly without any broken piece. Surgery was completed using a new tip without further complications.

On electron microscopy, the phacoemulsification tip showed a smooth break in both the ends with crack around the ABS microhole [Fig. 2a and b]. The ABS microhole may have been the site of weakness leading to cracking and fracture of phaco tip.

Discussion

Breaking of instruments intraoperatively during phacoemulsification may cause damage to intraocular tissue.[1-3] In most cases, break is noted in the second instrument, such as chopper, sinskey hook, or spatula, which may have come in contact with phacoemulsification tip.[3,4]

In rare cases, break may be noted in phacoemulsification tip.[5] Early detection and removal of broken phacoemulsification tip inside its sleeve helps in avoiding inadvertent damage.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

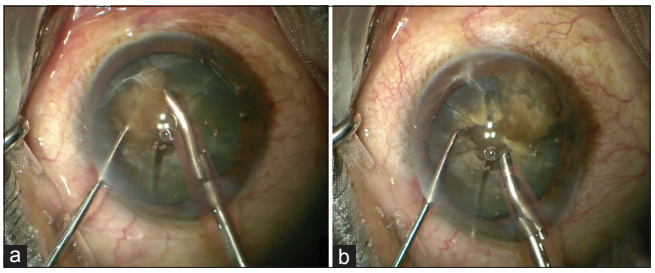

Figure 1: (a) Smooth break in phacoemulsification tip during chopping manoeuvre. (b) Removal of broken phacoemulsification tip inside sleeve using second instrument

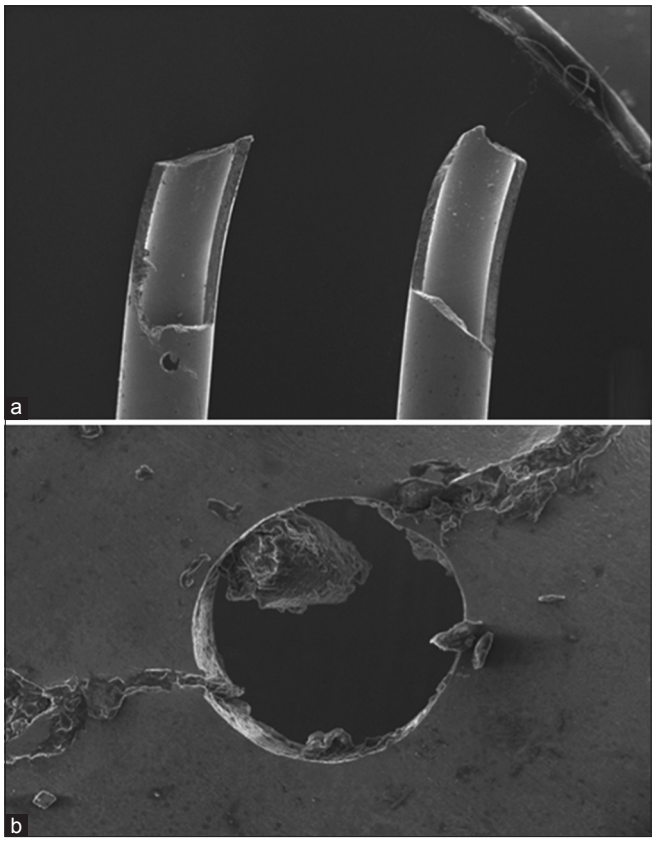

Figure 2: Electron microscopy of broken ends of phacoemulsification tip. (a) Smooth crack noted in both ends of broken tip. (b) Crack around ABS microhole in magnified view (10×)

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Conflicts of interest

There are no conflicts of interest.

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