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Service (sector) CataractN° CEP

Followability evaluation using two different irrigating choppers.

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Introduction: Ultrasound cataract surgery can be done through incisions less than 1.5mm. For microincision surgery, irrigation should be separated from emulsification/aspiration, and irrigating nucleus manipulators should be used. The problem with these irrigating nucleus manipulators is that they have less irrigation and that they seems to have less followability than the traditional co-axial irrigation.

Objectives: To avaliate and comopare the attraction force of nucleus fragments provided by co-axial irrigation, and by irrigating choppers with superior irrigation port and with lateral irrigation ports.

Methods: Using an artificial eye model, the time for aspiration and emulsification of 9 pieces of an artificial nucleus inserted in the bag was measured when using traditional co-axial irrigation, and when using 23g irrigating choppers with superior irrigating port and with two lateral irrigating ports. 6 groups were evaluated, co-axial irrigation without and with side port incision (1 and 2), superior irrigation chopper with 900 apart and with opposing incisions (3 and 4), and lateral irrigation chopper with 900 apart and with opposing incisions (5 and 6). In groups 1 and 2 the incisions were 2.75mm, and in all other groups 1.2mm. For all measurements the Alcon Legacy 20.000 with a straight/flared/ABS/microtip was used. The irrigation was 46ml/min and aspiration settings were 350mmHg (vacuum), 30cc/min (flow rate) in all groups. US was 50% in panel mode in all groups. The results obtained will be compared between the groups.

Results: The time elapsed to aspiration of the nucleus fragments were: 15.06seg (group 1), 15.04seg (group 2), 19.29seg (group 3), 22,17seg (group 4), 21,19seg (group 5), and 19,14seg (group 6). There was no difference between groups 1 and 2, 3 and 6, and 4 and 5.

Conclusions: The attraction force of nucleus fragments was greater when using co-axial irrigation (no difference with or without a side port incision). When using irrigating choppers, the attraction force of nucleus fragments was greater with superior irrigating choppers and 900 apart incisions and with lateral irrigating choppers and opposing incisions