New Technique for Nuclear Fragmentation in Phacoemulsification

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Abstract:

The hard nucleus is considered as a piece of stone, so we use high phaco energy in standard phaco to fragment it. A new technique was described in this paper for nuclear fragmentation in Phacoemulsification, which does not depend mainly on phaco energy but depends on osmotic pressure of the nucleus. The nucleus is a living tissue and has its own special anatomical and physiological rules so we tried to fragment these hard nuclei rapidly and safely without phaco energy at all. This study included 20 patients with hard cataract managed by our new technique. 15 patients with hard cataract managed by divide and conquer technique (control group). we aimed to create a groove with two edges, to inject saline 0.9% at one edge and fixate from the other. Also we aimed from this groove to compensate for relative increase in the size of the nucleus after hydration then we used two blunt choppers to divide the nucleus into four pieces. All pieces were similar to gelatinous mass with no sharp borders. We found that corneal oedema, rupture of posterior capsule and mean effective Phaco time were significantly higher in controls versus patients (P

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