



Ain Shams University
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Study of Enhanced Safety and Increased Efficiency of The New Modalities of Phacoemulsification (OZIL and ICE Technology)

Essay

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List of abbreviation

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ASCRS	American Society of cataract and Refractive surgery
BCVA	Best Corrected Visual Acuity
BSS	Balanced salt solution
CASE	Chamber Automated Stabilization Environment
CDC	Crater divide and conquer
CDE	Cumulative delivered energy
Cm	Centimeter
D	Diopter
DCN	Divide and conquer nucleofraxis
ECCE	Extra-Capsular Cataract Extraction
I/A	Irrigation and aspiration
ICCE	Intra-capsular Cataract Extraction
ICE	Increased Control and Efficiency
IOL	Intra-ocular lens
J	Joule
KHz	Kilo Hertz
Mg	Milligram
MICS	Micro-Incision Cataract Surgery
mL	milliliter
ml/min	milliliter per minute
mm	millimeter
mmHg	millimeter mercury
ms	milliseconds

No	Number
Phaco	Phacoemulsification
POP	Pre-occlusion phacoemulsification
TDC	Trench divide and conquer
UCVA	Uncorrected Visual Acuity
Um	Micrometer
U/S	Ultrasound
YAG	Yttrium Aluminum Garnet

Introduction

Introduction

Phacoemulsification technique uses ultrasonic waves to emulsify the nucleus of the crystalline lens to remove the cataract through a small incision. The modern surgery eliminated the need for an extended hospital stay and made the surgery less painful.

Phacoemulsification is a procedure in which an ultrasonic device is used to break up and then remove a cloudy lens from the eye to improve vision. A foldable intraocular lens implant is placed permanently (**Buettner et al; 2002**).

New modalities of phacoemulsification: The favorite phaco techniques to enhance safety and increase efficiency include:-

.The Ozil Torsional Phacoemulsification Technology

.The WhiteStar ICE Technology (**Packard, 2006**)

The Ozil torsional phacoemulsification greatly reduces the repulsion of nuclear material from the phaco tip. Less repulsion at the tip means that the lenticular material stays on the tip and the tip therefore is kept in an occluded or nearly occluded state. The greater occlusion in turn decreases turbulence in the anterior chamber increase the efficiency of the lens' removal. The shearing action of the tip makes it more efficient in removing material, because each side-to-side movement emulsifies material (**Allen, 2006**).