

Introduction and Aim of the Work

Review of Literature

Patients and Methods

Comparative study of two groove technique and stop and chop technique in phacoemulsification of hard cataract

Thesis

Submitted in partial fulfillment of M.D. degree in Ophthalmology

Investigator

Ghada Azab Soliman Nassar

M.B.B.Ch, M.Sc. Ophthalmology, Cairo University

Supervised by

DR. / Mohamed Mahmoud Elsayed

Professor of Ophthalmology
Faculty of Medicine, Cairo University

DR. / Omaila Khaled Eyada

Professor of Ophthalmology
Faculty of Medicine, Cairo University

DR. / Mohamed Abdel-Moneim Hassaballa

Assistant professor of Ophthalmology
Faculty of Medicine, Cairo University

**Faculty of Medicine
Cairo University
2009**

Results

Discussion

Conclusion

Summary

References

Arabic Summary

Acknowledgment

*First of all, I must express the utmost gratitude to **Allah**, the most kind and merciful, for all the gifts his majesty has offered me.*

*No words can fulfill the feelings of gratitude and respect I carry to **Professor Dr. Mohamed Mahmoud Elsayed**, Professor of Ophthalmology, Cairo University, for his great direction all through this work with a scientific personality and fruitful advice. It had been a great honor and extreme pleasure for me to proceed with this work under his supervision.*

*I am also very grateful to **Professor Dr. Omaila Khaled Eyada**, Professor of Ophthalmology, Cairo University, for her generosity, effort, close scientific guidance and outstanding help.*

*I would like to express my sincere appreciation and deepest gratitude to **Dr. Mohamed Abdel-Moneim Hassaballa**, Assistant Professor of Ophthalmology, Cairo University, for his continuous supervision, illuminating guidance, constructive criticism and wise counseling as well as patience and support throughout this work.*

Then I must thank my family for their great care and assistance. Last, but not least I would like to thank all my colleagues in department 12 for their help and assistance.

List of abbreviations

BCVA	<i>Best corrected visual acuity</i>
BSS	<i>Balanced salt solution</i>
CCC	<i>Continuous curvilinear capsulorrhexis</i>
ECCE	<i>Extracapsular cataract extraction</i>
MDC	<i>Multidirectional divide and conquer</i>
N III	<i>Nuclear hardness grade III</i>
N IV	<i>Nuclear hardness grade IV</i>
PCIOL	<i>Posterior chamber intraocular lens</i>
UCVA	<i>Uncorrected visual acuity</i>

List of tables

<i>Table 1</i>	<i>Sex distribution in groups A and B</i>	<i>66</i>
<i>Table 2</i>	<i>Grade of nuclear hardness in groups A and B</i>	<i>69</i>
<i>Table 3</i>	<i>Clarity of the cornea in groups A and B</i>	<i>70</i>
<i>Table 4</i>	<i>Endothelial cell count in both groups</i>	<i>71</i>
<i>Table 5</i>	<i>Relation between grade of nuclear hardness, phaco time, endothelial cell count and endothelial cell loss in both groups</i>	<i>75</i>
<i>Table 6</i>	<i>Visual acuity preoperative and postoperative in groups A and B</i>	<i>77</i>
<i>Table 7</i>	<i>Corneal thickness in both groups preoperative and postoperative</i>	<i>84</i>
<i>Table 8</i>	<i>Comparison of different evaluation parameters between two groups</i>	<i>85</i>
<i>Table 9</i>	<i>Patient data in group A</i>	<i>88</i>
<i>Table 10</i>	<i>Patient data in group B</i>	<i>90</i>

دراسة مقارنة بين أسلوب الشق الثنائي و أسلوب التوقف و القطع فى تفتيت المياه
البيضاء الصلبة بالموجات فوق الصوتية

رسالة مقدمة من

الطبيبة/ غادة عزب سليمان نصار

توطئة للحصول على درجة الدكتوراة فى أمراض طب و جراحة العيون
كلية الطب – جامعة القاهرة

تحت إشراف

أ.د/ محمد محمود السيد

أستاذ طب و جراحة العيون

جامعة القاهرة

أ.د/ أميمة خالد عيادة

أستاذ طب و جراحة العيون

جامعة القاهرة

د/ محمد عبد المنعم حسب الله

أستاذ مساعد طب و جراحة العيون

جامعة القاهرة

كلية الطب

جامعة القاهرة

٢٠٠٩

List of Figures

Figure number	Title	Page
Figure 1	Crater divide and conquer technique	7
Figure 2	Fine 's “chip and flip” technique	9
Figure 3	The crack and flip technique	10
Figure 4	Phaco chop technique	12
Figure 5	Stop and chop technique	14
Figure 6	Phaco flip emulsification of the nucleus	16
Figure 7	Four quadrants nucleofracture technique	28
Figure 8	Phaco slice and separate technique	32
Figure 9	Karate chopping technique	34
Figure 10	Counter prechopping technique	36
Figure 11	Peripheral radial chop technique	47
Figure 12	Two groove technique	49
Figure 13	Creation of the 1 st groove	57
Figure 14	Deepening of 1 st groove	58
Figure 15	Completion of 1 st groove	58