



Inzisionsgrößen vor und nach Implantation der SN60WF IOL mit dem Monarch Injektor System und der C und D Kartusche.



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Inzisionsgrößen Studien für faltbare IOLs (Kohnen T et al)

1. Kohnen T, Lambert RJ, Koch DD. Incision sizes for foldable intraocular lenses. *Ophthalmology* 1997; 104:1277-1286
2. Kohnen T. A new caliper for small incision cataract surgery. *J Cataract Refract Surg* 1997; 23:1298-1300
3. Kohnen T, Koch DD. Experimental and clinical evaluation of incision size and shape following forceps and injector implantation of a three-piece high-refractive-index silicone intraocular lens. *Graefes Arch Clin Exp Ophthalmol* 1998; 236:992-928
4. Kohnen T. Incision sizes with 5.5-mm total optic, 3-piece foldable intraocular lenses. *J Cataract Refract Surg* 2000; 26:1765-1772
5. Kohnen T, Kasper T. Incision sizes before and after implantation of foldable intraocular lenses with 6 mm optic using Monarch and Unfolder injector systems. *Ophthalmology* 2005; 112:58-66 (Erratum in: *Ophthalmology* 2005; 112:1394)

Aktuelle Studie (2007)

- Kleinstmögliche Inzisionsgröße für SN60WF vor und nach Implantation mit dem Monarch Injektor System und der C- und D- Kartusche
- Prospektiv, randomisiert

Patienten

- Einschlusskriterien
 - Senile Katarakt
 - Phakoemulsifikation in topischer Anästhesie
- Ausschlusskriterien
 - Vorherige Augenoperationen
 - Korneale Pathologie

Patients

- 100 Patienten
- 4 Gruppen a 25 Patienten
 - Gruppen unterteilt nach Implantationstechnik und Injektorsystem

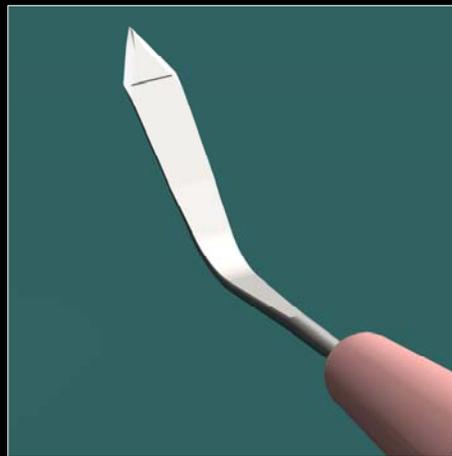
Methode

- Ein Chirurg (TK)
- Operationstechnik
 - 2 Parazenthesen
 - Selbstschliessende posteriore limbale tunnel Inzision (temporal), Länge: 1.75 - 2 mm
 - Kataraktextraktion
KR, Phakoemulsifikation, bimanuelle Rindentfernung

Mikrokoaxial Phako



Zweischneidiges HP2 Phako-Messer



Phakotip & Sleeve

Mini-flared Kelman Tip in
Kombination mit 0.9 mm
Nano or 1.1 mm Ultra Sleeve
für OZil Phako mit 1.8 – 2.0
oder 2.2 mm



Microsmooth Sleeves

1.1 mm



0.9 mm



HIS

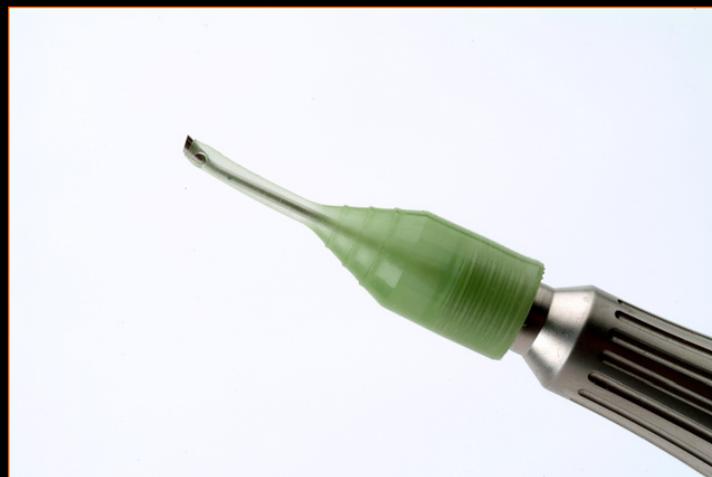
Standard

Micro

Ultra

Nano

Phacotip & sleeve



IOL

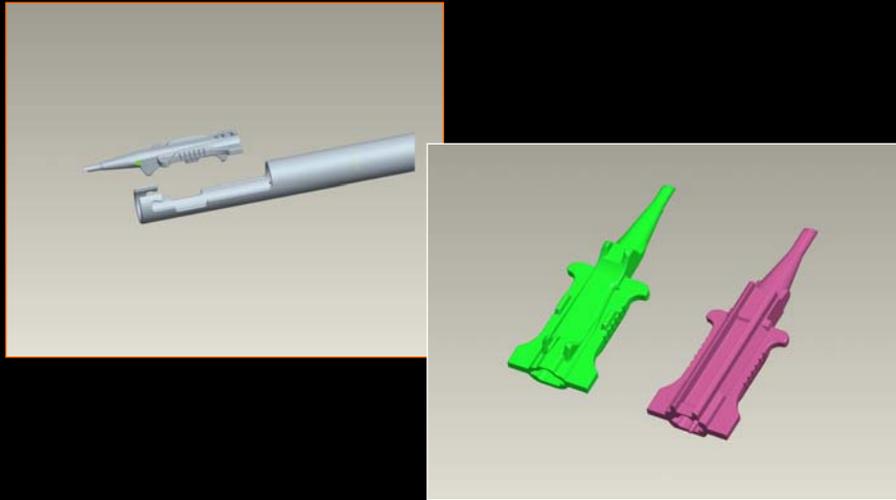
- SN60WF (IQ)
 - Basierend auf der *SN60AT*
 - Hydrophobes Acrylat
 - Einteilig
 - Blaufilter
 - Posteriore asphärische Oberfläche
 - $Z_4^0 = -0.2 \mu\text{m}$
 - Implantiert: N=100

Injektor und Kartuschen

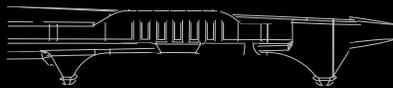
- Injektor: Monarch II & III
- Kartusche: „C“ & „D“



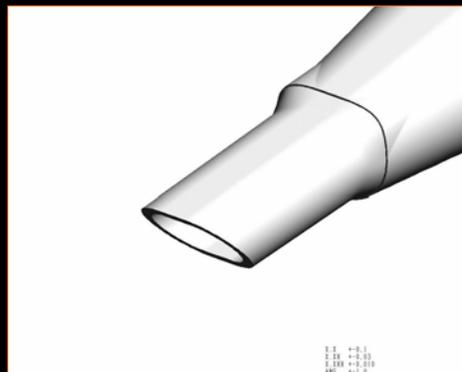
Injektor und Kartuschen



Monarch D Cartridge



41% weniger Volumen als C



0.8 ±0.1
0.25 ±0.05
0.25 ±0.05
0.5 ±0.1

IOI Implantation

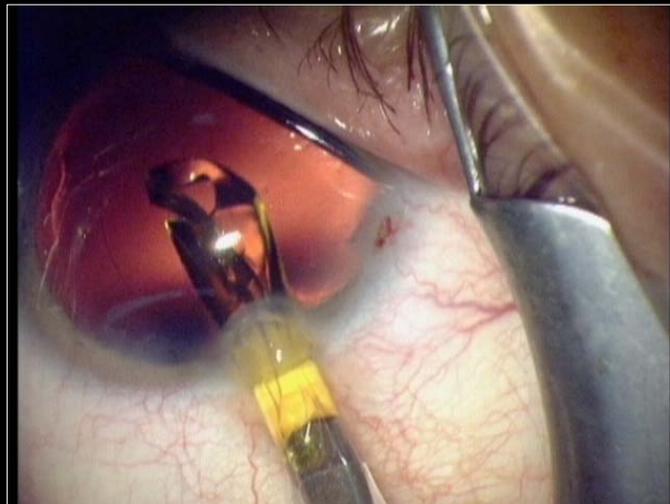
1. „Wound Assisted“

- Kartusche wurde an die Inzision „angedockt“

2. „Direct Implantation“

- Kartusche wurde zu 15% durch die Inzision geschoben ⇒ Implantation der Haptik in den Kapselsack

IOI Implantation



Patientengruppen

| | Group 1 | Group 2 | Group 3 | Group 4 |
|--------------------|---------------|--------------------------|--------------|--------------------------|
| N | 25 | 25 | 25 | 25 |
| Injector system | Monarch III | Monarch III | Monarch II | Monarch II |
| Cartridge | D-Cartridge | D-Cartridge | C-Cartridge | C-Cartridge |
| surgical technique | direct | wound assisted (docking) | direct | wound assisted (docking) |
| Age (years) | 68.84 ± 11.01 | 72.2 ± 13.74 | 70.08 ± 12.2 | 71 ± 12.88 |
| range | 43 - 85 | 26 - 92 | 31 - 85 | 31 - 85 |
| dioptric power (D) | 20.82 ± 2.71 | 21.78 ± 2.43 | 22.3 ± 2.64 | 21.4 ± 2.82 |
| range | 16 - 25 | 17 - 28.5 | 16 - 26.5 | 16 - 26.5 |

Inzisionsgrößen

- Messungen
 - 1,8 bis 2,20 mm Inzision ⇒ Messung 1
 - Nach Phako ⇒ Messung 2
 - Evtl. Inzisionsvergrößerung ⇒ Messung 3
 - IOL Implantation ⇒ Messung 4

Messungen

- Kohnen caliper (G-1936; Geuder AF, Heidelberg, Germany)
- Tsuneoka Micro Incision Gauge (AE-1547T, ASICO, Westmont, IL) Kohnen caliper (G-1936; Geuder AF, Heidelberg, Germany)
- Tsuneoka Micro Incision Gauge (AE-1547T, ASICO, Westmont, IL)

Case Report Form

Surgeon Name _____ Date of Surgery _____

AcrySof® IQ IOL with the Monarch Delivery System: Surgical Evaluation Form

| | | | | | |
|----------------------|---|--|--|--|--|
| Case information | Patients initials | ____/____/____ | | | |
| | Injector System Used | <input type="checkbox"/> C Cartridge | <input type="checkbox"/> D Cartridge | <input type="checkbox"/> Monarch II | <input type="checkbox"/> Monarch III |
| | Sleeve Used | <input type="checkbox"/> Micro | <input type="checkbox"/> Ultra | <input type="checkbox"/> Nano | |
| Video review | DVD used in Ant Chamber | | | | |
| | DVD used in cartridge | | | | |
| Phacoemulsification | Cataract (grade I-IV) | _____ | | | |
| | CDE | _____ | | | |
| | Incision blade: | <input type="checkbox"/> 1.8 mm | <input type="checkbox"/> 2.0 mm | <input type="checkbox"/> 2.2 mm | <input type="checkbox"/> 2.75 mm |
| Incision location | | <input type="checkbox"/> Center of CCC | <input type="checkbox"/> Short of CCC center | <input type="checkbox"/> Peripheral to CCC | <input type="checkbox"/> At the incision |
| | Incision position when IOL is inserted: | | | | |
| Incision Size (mm) | | After initial tunnel incision | After phacoemulsification | Before IOL implantation | After IOL implantation |
| | Kohneh caliper (mm) | _____ | _____ | _____ | _____ |
| | Tsuneoka Micro Incision Gauge (mm) | _____ | _____ | _____ | _____ |
| Affix IOL Label Here | | Date and signature _____ | | | |

Statistik

- Saphiro Wilk Test =>
- Kruskall Wallace Test
- P= 0,05

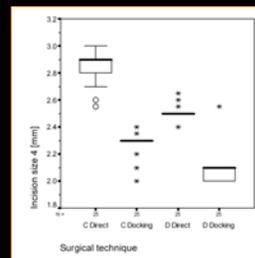
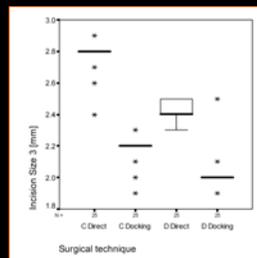
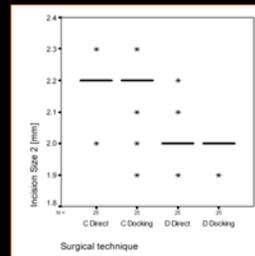
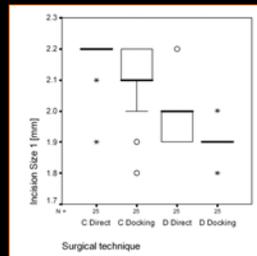
Inzisionsgrößen

| Measurement | Group 1** | Group 2* | Group 3 | Group 4 |
|---|--------------------|--------------------|--------------------|--------------------|
| 1 Mean incision size (mm) | 1.98 ± 0.07 | 1.92 ± 0.06 | 2.17 ± 0.06 | 2.12 ± 0.01 |
| 2 Mean incision size after phacoemulsification (mm) | 2.01 ± 0.05 | 2.98 ± 0.04 | 2.20 ± 0.16 | 2.17 ± 0.19 |
| Mean enlargement (mm) | 0.03 ± 0.05 | 0.07 ± 0.06 | 0.03 ± 0.05 | 0.06 ± 0.06 |
| Mean enlargement (%) | 1.62 | 3.55 | 2.77 | 1.48 |
| Necessary enlargements (% of cases) | 100 | 24 | 100 | 16 |
| 3 Mean incision size before implantation (mm) | 2.42 ± 0.07 | 2.02 ± 0.11 | 2.77 ± 0.11 | 2.19 ± 0.09 |
| Mean enlargement (mm) | 0.42 ± 0.07 | 0.06 ± 0.06 | 0.57 ± 0.08 | 0.02 ± 0.05 |
| Mean enlargement (%) | 20.72 | 2.02 | 26 | 0.92 |
| 4 Mean incision size after implantation (mm) | 2.51 ± 0.05 | 2.09 ± 0.11 | 2.86 ± 0.11 | 2.28 ± 0.08 |
| Mean enlargement (mm) | 0.08 ± 0.05 | 0.06 ± 0.06 | 0.09 ± 0.04 | 0.09 ± 0.04 |
| Mean enlargement (%) | 3.57 | 3.06 | 3.07 | 3.92 |
| Mean total enlargement (mm) | 0.53 ± 0.08 | 0.17 ± 0.12 | 0.69 ± 0.09 | 0.16 ± 0.08 |
| Mean total enlargement (%) | 26.82 | 8.87 | 31.83 | 7.66 |

* small IOL damage in one case

** insertion of injector by rotating in two cases

Inzisionsgrößen



Inzisionsgrößen für faltbare hydrophobe einstückige IOLs

- Koaxiale Phakoemulsifikation (C-MICS)
 - Irrigation und Aspiration in einer Leitung
- Implantation durch 2,0 mm heute möglich
- „Wound-assisted“ Technik

Microincisional surgery „MICS“

- Coaxiale Phakoemulsifikation (C-MICS)
 - Irrigation and aspiration in one line
- Biaxiale Phakoemulsifikation (B-MICS)
 - Separation of irrigation and aspiration
 - Microincision

Vielen Dank für Ihre
Aufmerksamkeit!

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