HEALAFLOW
CROSSTLINKED HA GLAUCOMA INJECTABLE IMPLANT
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HealaFlow is a slowly resorbable crosslinked viscoelastic gel indicated for penetrating and non-penetrating glaucoma surgery. Injected under the scleral flap and conjunctiva, it acts as a drainage implant and limits the postoperative fibrosis thus improving the surgical success rate.

HealaFlow is made up of 22.5 mg/ml crosslinked sodium hyaluronate (non animal origin).

**Technical sheet**

- **HA concentration**: 22.5 mg/ml
- **Molecular weight**: > 2.5 Mda
- **Crosslinking agent**: BDDE (1,4-Butanediol diglycidyl ether)
- **Origin of the polymer**: Non animal /biofermentation
- **PH**: Physiological pH (7.0)
- **Osmolarity**: Physiological Osmolarity (305 mOsm/kg)
- **Endotoxin content**: 0.5 EU/ml
- **Low protein rate**: < 50 ppm
- **Sterilization**: Autoclave sterilization

"Nature abhors a vacuum”
Aristotle
1 | A spaces-filling product
- Long-lasting effect: stabilizes a patent scleral lake and a durable filtering bleb beyond its slow resorption
- Prevents adhesions between flap and sclera & between conjunctiva and episcleral tissue

2 | An anti-inflammatory effect
- HA inhibits inflammation and fibrosis (inhibits cytokins, cell migration, phagocitose and lymphocyt transformation)
- The site of surgery remains quiet

3 | Non-animal origin
- Improved safety
- Less risk of allergy caused by animal proteins
- Non-toxic
- Highly purified

4 | Easy-to-use, an injectable implant
- Gel texture
- HealaFlow is presented in a 0.6 ml disposable glass syringe 25 Gauge 7/8 canula
- Sterile - Colorless - Totally transparent

Indication
HealaFlow is indicated in all types of glaucoma surgeries (penetrating, non-penetrating, shunts, stents, tubes).

HealaFlow can be injected:
- Into the scleral lake · Fig.1
- Under the scleral flap · Fig.2
- Under the conjunctiva · Fig.3

Dosage and Administration
During glaucoma surgery, HealaFlow will be injected under the scleral flap and between the sclera and the conjunctiva in order to provide a space-occupying effect and to control the wound healing process. The surgeon should inject only a small quantity of HealaFlow (0.05 - 0.1 ml) under the scleral flap and a larger amount (0.2 - 0.4 ml) under the conjunctiva.

We recommend not to inject HealaFlow intracameraly to avoid pressure spike.
HealaFlow can be used in all types of glaucoma filtering surgeries:
• Trabeculectomy
• Deep Sclerectomy
• Viscocanalostomy
• Shunts/stents/tubes

1 | Penetrating surgery · Fig. 1
During conventional Trabeculectomy...
• Standardized Trabeculectomy with or without MMC.
• Application of HealaFlow underneath the flap with preplaced releasable suture. HealaFlow is injected while pulling back the canula.
• Avoid injection into the anterior chamber.
• Application of HealaFlow between sclera and conjunctiva.
  After delicate closure of the conjunctiva, a larger amount of HealaFlow is injected to create a subconjunctival space for future bleb formation.

2 | Non-penetrating surgery · Fig. 2
HealaFlow is indicated during non-penetrating surgery, Deep Sclerectomy or Viscocanalostomy.
HealaFlow is injected under the first scleral flap in order to maintain a patent scleral lake and filtering bleb.
• Application before suturing scleral flap · Fig. 3
• Light suture tightening to avoid too much outflow resistance in the first postop days.
• Do not inject HealaFlow near the Descemet’s membrane to prevent rupture.
• Additional injection underneath the scleral flap after light suturing of scleral flap.
• After suturing verify that no gel is coming out of the borders.
• HealaFlow injection under the conjunctiva to separate the tissue and create a large subconjunctival bleb · Fig. 4
Trabeculectomy
Professor J. Stuermer
Winterthur · Switzerland

50 cases between May 2008 / February 2009
50 eyes / 50 patients
28% males / 72% females
Mean age 70.7 years (41-88)
All caucasian origin.

Deep Sclerectomy
Professor A. Mermoud
Lausanne · Switzerland

19 difficult cases between July 2008 / February 2009
19 eyes / 18 patients
55% males / 45% females
Mean age 61.7 years (14-88)
94% caucasian origin.

Viscocanalostomy
Dr. G. Sunaric Mégevand
Geneva · Switzerland

40 cases between May 2008 / February 2009
40 eyes / 40 patients
25% males / 75% females
Mean age 72 years (46-92)
95% caucasian origin.

Nature Abhors a Vacuum
HEALAFlow RETROSPECTIVE STUDIES

IOP results

<table>
<thead>
<tr>
<th></th>
<th>MEAN</th>
<th>SD</th>
<th>MIN</th>
<th>MAX</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preop IOP (mm Hg)</td>
<td>22.6</td>
<td>6.5</td>
<td>12</td>
<td>40</td>
</tr>
<tr>
<td>Preop number of</td>
<td>2.7</td>
<td>0.9</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>glaucoma medication</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Last postop IOP (mm Hg)</td>
<td>11.2</td>
<td>4.8</td>
<td>3</td>
<td>22</td>
</tr>
<tr>
<td>Follow-up time (weeks)</td>
<td>28</td>
<td>8</td>
<td>0.2</td>
<td>36</td>
</tr>
</tbody>
</table>

Complications: 4 IOP spike, all were treated by release of releasable suture and massage. No iris incarceration.

IOP results

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<th>SD</th>
<th>MIN</th>
<th>MAX</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preop IOP (mm Hg)</td>
<td>19.4</td>
<td>5.2</td>
<td>12</td>
<td>34</td>
</tr>
<tr>
<td>Preop number of</td>
<td>2.3</td>
<td>1.2</td>
<td>0</td>
<td>5</td>
</tr>
<tr>
<td>glaucoma medication</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Last postop IOP (mm Hg)</td>
<td>11.3</td>
<td>3.6</td>
<td>6</td>
<td>18</td>
</tr>
<tr>
<td>Follow-up time (weeks)</td>
<td>15.6</td>
<td>10.1</td>
<td>4</td>
<td>31</td>
</tr>
<tr>
<td>Diffuse filtration bleb</td>
<td>94%</td>
<td>all but 1 patient</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(% of patients)</td>
<td></td>
<td></td>
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</tbody>
</table>

Complications: 1 Postop hypotony (reformation of AC). 1 IOP spike on day one due to HealAFLOW in AC (AC wash out). 1 Iris incarceration (laser pupilloplasty).

IOP results

<table>
<thead>
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<th>MAX</th>
</tr>
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<tbody>
<tr>
<td>Preop IOP (mm Hg)</td>
<td>22.4</td>
<td>5.4</td>
<td>14</td>
<td>33</td>
</tr>
<tr>
<td>Preop number of</td>
<td>2.9</td>
<td>0.7</td>
<td>1</td>
<td>4</td>
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<tr>
<td>glaucoma medication</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Last postop IOP (mm Hg)</td>
<td>11.3</td>
<td>3.3</td>
<td>4</td>
<td>24</td>
</tr>
<tr>
<td>Follow-up time (weeks)</td>
<td>21.2</td>
<td>11.3</td>
<td>4</td>
<td>36</td>
</tr>
<tr>
<td>Very shallow bleb</td>
<td>87%</td>
<td>all but 5 patients</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(% of patients)</td>
<td></td>
<td></td>
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Complications: There was no complication after viscocanalostomy in these 40 eyes. Bleb formation is not mandatory in viscocanalostomy but was found in the majority of cases as HealAFLOW could spread from the scleral cavity under the conjunctiva.

Nature Abhors a Vacuum
Patient 1
Conjunctival bleb and UMB image
6 weeks after

Patient 2
Conjunctival bleb and UMB image
16 weeks after

Patient 3
Conjunctival bleb and UMB image
25 weeks after

Nature Abhors a Vacuum

Pictures by Prof. Mermoud · Lausanne
To evaluate the efficiency of HealaFlow in glaucoma surgery, we are currently setting up a prospective and randomized clinical trial in Switzerland.

**Multicenter study (3 sites)**

- **Trabeculectomy:** Prof. Joerg Sturmer (Winterthur)
- **Deep Sclerectomy:** Prof. André Mermoud (Lausanne)
- **Viscocanalostomy:** Dr. Gordana Sunaric Mégevand (Genève)

**For more information**

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