Quality of Life in glaucoma surgery - canaloplasty versus trabeculectomy

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Introduction
In medically uncontrolled chronic open angle glaucoma the standard surgical procedure is trabeculectomy (TET), a type of penetrating glaucoma surgery. Unfortunately it is associated with severe intra- and postoperative complications, amongst others overfiltration with hypotony and further complications, wound leak, hypertonia, bleb revision and needling (1). A newer surgical procedure is canaloplasty, a non penetrating surgical method. The aims of this surgery are to restore the natural outflow pathways and to achieve a blebless intraocular pressure control (2). The rate of complications is lower than in TET (e.g. perforation of Descemet’s and Descemet’s detachment).

It has been shown that decision making in glaucoma should consider the patient’s point of view and aim to improve Quality of Life (QoL) of the patient. QoL includes physical and emotional as well as social and functional features (4). To assess such attributes several questionnaires have been developed, some generic and some glaucoma-specific (5).

Based on this we wanted to evaluate retrospectively the effect of canaloplasty and TET on the patient’s quality of life.

Methods
In 176 patients a canaloplasty and in 152 a trabeculectomy with mitomycin have been performed in two centers (University of Wuerzburg and Ophthalmic Center in Cologne Porz). To evaluate QoL a questionnaire was used that included following main topics: results of surgery, rate of revision surgeries, postoperative patient’s mood, influence of postoperative care on QoL, surgery interference with daily activities and postsurgical complaints. The questionnaire was completed twelve months after surgery and statistically analysed with the student’s t-test and chi-square-test for assessment of normal distribution.

Results
The patient’s mood was significantly (p=0.009) more positive in the canaloplasty group (54% vs 37% in the TET group) and the patients were happier and less stressed concerning the surgery (84% vs 51% TET, data not shown).

The stress induced by the postsurgical care was statistically significantly lower after canaloplasty (14% vs 46% TET , data not shown).

There were also statistically significant differences in the patient’s postsurgical complaints and surgery interference with daily activities, e.g. the impairment in reading was much lower to inexistenting after canaloplasty (Figure 3). Likewise complaints such as burning and stinging of the eye were significantly lower stoted by patients after canaloplasty compared to TET patients (Figure 4).

Less revision surgeries were needed after canaloplasty (8% vs 35% in TET). This result was also statistically significant (p=0.001, Figure 5).

57% of the patients who had undergone canaloplasty were highly satisfied with the results of surgery in contrast to patients after TET (high satisfaction in 41%), the difference in satisfaction was statistically significantly lower after canaloplasty (8% vs 35% in TET). This result was also statistically significant (p<0.001, Figure 5).

Conclusions
Canaloplasty appears to be associated with a lower impairment of QoL after surgery and to be a surgical method with a higher patient satisfaction rate, when compared to TET. However we need to await long term results from the surgical effect on the lowering of the intracocular pressure in order to confirm long-term patient satisfaction with this new type of surgery.

Fig. 1 Study demographics

<table>
<thead>
<tr>
<th></th>
<th>TET</th>
<th>Canaloplasty</th>
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<tr>
<td>Age</td>
<td>66.7 (SD=11.8)</td>
<td>69.5 (SD=10.2)</td>
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<tr>
<td>Gender Male</td>
<td>62</td>
<td>91</td>
</tr>
<tr>
<td>Female</td>
<td>90</td>
<td>84</td>
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Fig. 2 Answer possibilities

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<th>Questionnaire scale</th>
<th>Not at all</th>
<th>Slightly</th>
<th>Partially</th>
<th>Predominantly</th>
<th>Extremely</th>
<th>Don’t know/Unratable</th>
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<tbody>
<tr>
<td></td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
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Literature

Financial interest: None.

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