

Documenta Ophthalmologica Proceedings Series 43

Second European Glaucoma Symposium

Helsinki, May 1984

Edited by E.L. Greve, W. Leydhecker  
and C. Raitta



Dr. W. Junk publishers

## Distributors

---

*for the United States and Canada:* Kluwer Academic Publishers, 190 Old Derby Street, Hingham, MA 02043, USA

*for the UK and Ireland:* Kluwer Academic Publishers, MTP Press Limited, Falcon House, Queen Square, Lancaster LA1 1RN, UK

*for all other countries:* Kluwer Academic Publishers Group, Distribution Center, P.O. Box 322, 3300 AH Dordrecht, The Netherlands

## Library of Congress Cataloging in Publication Data

---

European Glaucoma Symposium (2nd : 1984 : Helsinki, Finland)  
Second European Glaucoma Symposium, Helsinki, May 1984.

(Documenta ophthalmologica. Proceedings series ; v. 43)  
Includes index.  
1. Glaucoma--Congresses. 2. Perimetry--Congresses.  
I. Greve, Erik L. II. Leydhecker, W. (Wolfgang)  
III. Raitta, C. IV. Title. V. Series. [DNLM:  
1. Glaucoma--congresses. 2. Glaucoma--therapy--congresses. W3 D0637 v.43 / WW 290 E887 1984s]

RE871.E97 1984 617.7'41 85-4287

ISBN-13: 978-94-010-8934-0

e-ISBN-13: 978-94-009-5516-5

DOI:10.1007/978-94-009-5516-5

## Copyright

---

© 1985 by Dr W. Junk Publishers, Dordrecht.

**Softcover reprint of the hardcover 1st edition 1985**

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted in any form or by any means, mechanical, photocopying, recording, or otherwise, without the prior written permission of the publishers,

Dr W. Junk Publishers, P.O. Box 163, 3300 AD Dordrecht, The Netherlands

## GONIOSCOPIIC TRABECULOTOMY. FIRST RESULTS

MANUEL QUINTANA  
(*Barcelona, Spain*)

### ABSTRACT

We describe a surgical method of goniotrabeculotomy which achieves a section of the trabecular meshwork without damage to the external wall of Schlemm's canal. Complications are minimal. A one year follow-up shows a fall of intraocular pressure in almost all cases. However, this effect is non-lasting and a slow rise in pressure occurs in most cases. Yet, medical therapy, if reinstated, achieves a better control than before the operation and usually can be less intense.

### INTRODUCTION

Increased resistance to the outflow of aqueous through the trabecular meshwork is the most accepted pathogenic mechanism in the majority of open-angle glaucomas ("trabecular glaucomas"). Thus, the rational treatment of the trabecular glaucomas should consist in opening the trabecular meshwork (TM). This has been attempted since the last century (11, 12, 13) and many times later on (1, 2, 4, 5, 8, 9), but all the techniques described so far have failed (3, 10) despite the in vitro evidence (6, 7) of the effectiveness of trabeculotomy.

### MATERIAL AND METHODS

A technique of trabeculotomy has been devised, which eliminates most of the presumed causes of failure of previous methods. The patient is operated under general anaesthesia; both eyes can be done at the same time. Pupils should be miotic. A coaxial operating microscope is necessary, with magnification of  $\times 10$ . We favour the Swann lens for angle visualisation. Our trabeculotome is a  $0.4 \times 15$  mm needle, or an insuline-type needle; we bend the tip  $20\text{--}30^\circ$  with a needle-holder; a factory-made needle (Morie, France) is even better. The needle is inserted into a syringe filled with "healon". "Modus operandi" is as in classical goniotomy (surgeon in the temporal side of the patient, patient's head rotated away from the surgeon, assistant holding

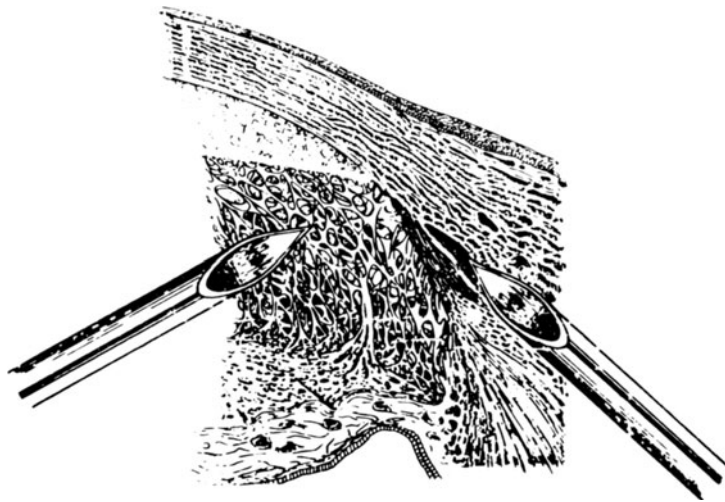
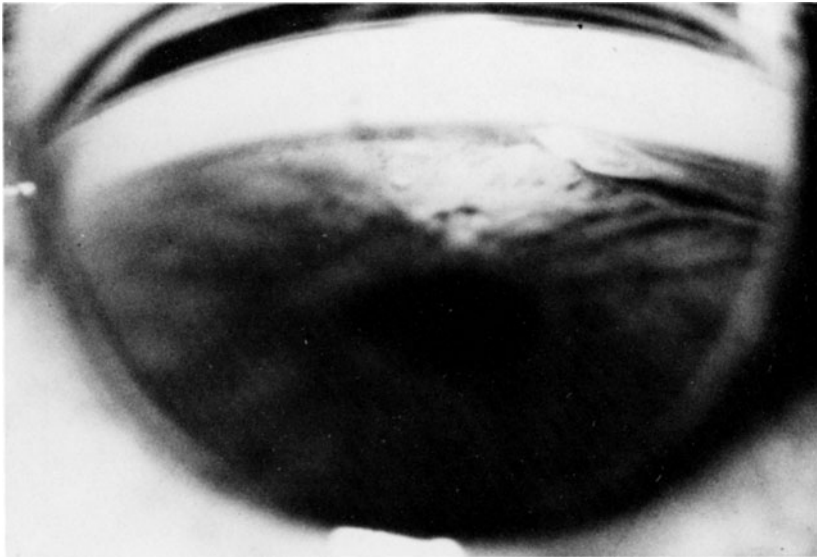


Fig. 1. Schematic drawing comparing the tangential approach to the perpendicular approach as in classic goniotomy or goniotrabeculotomy.

the vertical recti). The needle penetrates the anterior chamber at 6 hours (right eye) or 12 hours (left eye) through the *scleral* side of the limbus; this is in order to run parallel to Schlemm's canal. Penetration at 6 or 12 hours allows a *tangential* approach (Fig. 1) to the angle; this avoids the pupillary field and the convexity of the lens. Penetration is carried on under direct control, to avoid the prismatic effect of the goniolens. Once the needle is in the anterior chamber, the goniolens is inserted, held with the surgeon's left hand. A drop of "healon" is a good wetting agent between cornea and goniolens. The TM is incised with the tip of the needle. From now on, and with the concavity of the tip *towards* the surgeon, the trabeculotome is progressively introduced in the angle. Only the tip of the instrument is introduced into Schlemm's canal, and the TM is stripped slowly, gently and easily from the canal's lumen towards the anterior chamber as the needle progresses in the angle (Fig. 2). Since the convexity of the tip is facing the external wall of the canal, this structure is not damaged. This is why we bend the tip and we point it towards the anterior chamber.

As in goniotomy, the assistant will rotate the globe clockwise as the surgeon introduces the trabeculotome counter-clockwise. A 100–120° trabeculotomy can be achieved. Healon can be injected at will at any time if the surgeon wants to deepen the angle. There is usually no chamber loss, but if this is the case, healon is injected.

Once trabeculotomy is completed, the trabeculotome is withdrawn, taking care of injecting some healon before leaving the anterior chamber (internal "tamponnade"); this avoids any loss of aqueous and the chamber remains full. The goniolens and rectus forceps are also withdrawn. A steroid-antibiotic ointment is applied, as well as a mild mydriatic. The eyes are patched for 24 hours.



*Fig. 2.* Goniophotography at operation. The tip of the needle stripping the trabecular meshwork.

Twenty-one eyes of 12 patients have been operated with this technique, with a follow-up period of one year (mean). There are 13 eyes with chronic open-angle glaucoma, 3 with pigmentary glaucoma, 4 disgenetic and 1 steroid-induced. Details are summarized in Table 1.

## RESULTS

### *Complications*

There are no operative complications, not even hyphema, provided there is no chamber loss ("ex vacuum" hyphema).

Postoperative complications are hyperemia, moderate, in 6 cases; and atrophy of the iris in three cases. Iris atrophy does not occur since we give steroids and we dilate the pupils (see discussion).

### *Clinical results*

The behaviour of the ocular pressures over one year is represented in Table 1 and Fig. 3. They can be summarized as follows: fall of pressure below 20 mm Hg in almost all cases in the first postoperative weeks, followed by a progressive rise in the second month (mean). From the second month, medical therapy must be reinstated in most cases, although less intensively in regard to the preoperative treatment. At one year, most cases are controlled,

# Explore Litigation Insights

Docket Alarm provides insights to develop a more informed litigation strategy and the peace of mind of knowing you're on top of things.

## Real-Time Litigation Alerts



Keep your litigation team up-to-date with **real-time alerts** and advanced team management tools built for the enterprise, all while greatly reducing PACER spend.

Our comprehensive service means we can handle Federal, State, and Administrative courts across the country.

## Advanced Docket Research



With over 230 million records, Docket Alarm's cloud-native docket research platform finds what other services can't. Coverage includes Federal, State, plus PTAB, TTAB, ITC and NLRB decisions, all in one place.

Identify arguments that have been successful in the past with full text, pinpoint searching. Link to case law cited within any court document via Fastcase.

## Analytics At Your Fingertips



Learn what happened the last time a particular judge, opposing counsel or company faced cases similar to yours.

Advanced out-of-the-box PTAB and TTAB analytics are always at your fingertips.

## API

Docket Alarm offers a powerful API (application programming interface) to developers that want to integrate case filings into their apps.

## LAW FIRMS

Build custom dashboards for your attorneys and clients with live data direct from the court.

Automate many repetitive legal tasks like conflict checks, document management, and marketing.

## FINANCIAL INSTITUTIONS

Litigation and bankruptcy checks for companies and debtors.

## E-DISCOVERY AND LEGAL VENDORS

Sync your system to PACER to automate legal marketing.