Controversies on the Management of Urinary Stones

International Course, Genoa, June 24-27, 1987

Controversies on the
Management of Urinary Stones

Editors
L. Giuliani, P. Puppo, Genoa

75 figures and 55 tables, 1988

KARGER


Library of Congress Cataloging-in-Publication Data
Controversies on the management of urinary stones.
'Proceedings of international course, Genoa, June 24-27, 1987.'
Includes bibliographies and index.
RC916.C66 1988 616.6'2206 88-13037
ISBN 3-8055-4760-9

Drug Dosage
The authors and the publisher have exerted every effort to ensure that drug selection and dosage set forth in this text are in accord with current recommendations and practice at the time of publication. However, in view of ongoing research, changes in government regulations, and the constant flow of information relating to drug therapy and drug reactions, the reader is urged to check the package insert for each drug for any change in indications and dosage and for added warnings and precautions. This is particularly important when the recommended agent is a new and/or infrequently employed drug.

All rights reserved.
No part of this publication may be translated into other languages, reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying, recording, microcopying, or by any information storage and retrieval system, without permission in writing from the publisher.

Copyright 1988 by S. Karger AG, P.O. Box, CH-4009 Basel (Switzerland)
Printed in Switzerland by Thr AG Offsetdruck, Pratteln
Contents

Preface . . . . . . . . . . . . . . . . VIII
Acknowledgement . . . . . . . . . . . . . . . . X

Technical Improvement in ESWL

Ziegler, M.; Neisius, D.; Zwergel, Th.; Wurster, H. (Homburg/Saar): Results of Extracorporeal Piezoelectric Lithotrips of Urinary Calculi with the Piezolith 2200 ................. 20
Rocco, F.; Larcher, P.; Decobelli, O.; Caimi, D.; Musci, R. (Milan): Spintherometer and Piezoelectric Lithotriptors: Comparison of Indications, Therapeutic Possibilities and Results ................. 30
Francesca, F.; Bellinzoni, P.; Di Girolamo, V.; Bramati, M.L.; Rigatti, P. (Milano): Extracorporeal Piezoelectric Lithotripsy ................. 37
Politis, G.; Griffith, D.P. (Houston, Tex.): ESWL: Stone-Free Efficacy in Different Types of Patients ................. 41
Puppo, P.; Bottino, P.; Germinale, F.; Caviglia, C. (Genoa): Index for Stone Treatment: A Way to Select the Indications for ESWL ................. 47
Mossig, H.; Schmidt, P.; Gasser, G. (Vienna): Prognostic Factors for Success of ESWL ................. 54
Griffith, D.P. (Houston, Tex.): ESWL: Prevention of Problematic Side Effects . . 61
Carini, M.; Selli, C. (Florence): Extension of the Indications to ESWL with Endourological Maneuvers ................. 66

Contents VI

Treatment Modalities Available in the Preparation of Hemophiliacs for ESWL .................. 78

The Management of Ureteral Calculi
Eisenberger, F.; Schmidt, A.; Rassweiler, J. (Stuttgart): Ureteral Stones: How to Manage Them ............. 83
Puppo, P.; Bottin, P.; Germinale, F.; Caviglia, C. (Genoa): Ureteral Stones: How to Manage Them ............. 105
Jenkins, A.D.; Gillenwater, J.Y. (Charlottesville, Va.): Extracorporeal Shock-Wave Lithotripsy in the Prone Position .................. 128
Manzone, D.J.; Chiang, B. (Los Gatos, Calif.): In situ ESWL Treatment of Lower Ureteral Stones Aided by Low-Flow Saline Irrigation .................. 134

Extracorporeal, Percutaneous and Surgical Management of Staghorn Stones
Eisenberger, F.; Schmidt, A. (Stuttgart): Staghorn Stones: Surgery or PCI and ESWL .................. 145
Prez-Castro Ellendt, E. (Madrid): Staghorn Stones: Surgery or PCI and ESWL 149
Giuliani, L.; Puppo, P.; Bottino, P.; Germinale, F.; Caviglia, C.; Ricciotti, G. (Genova): Staghorn Stones: Surgery or PCI and ESWL .................. 156

Contents VII
The conventional management of urinary lithiasis has been completely revolutionized in recent years with the introduction of alternative noninvasive techniques which have replaced open surgery in 90% of the cases, at least in the most industrially advanced countries.
The rationale of noninvasive techniques, such as extracorporeal shock wave lithotripsy (ESWL), is based on the wish to reduce the cost of therapy, both from the health care and the economical points of view. Actually, the stone 'per se' is only a symptom, being the sum of the causes that lead to stone formation, the real disease. The removal of the stone is therefore only symptomatic therapy and should be as noninvasive as possible, being unable to avoid recurrence in most cases and repeated surgery for stone surely being harmful for the kidney.

From an economical point of view there is an undebatable advantage in using noninvasive techniques, both in terms of hospital costs and more so of social costs. However, after any revolutionary change, there is a time for critical evaluation of the results and for revisitation of the old and new problems. The different experience of each operator leads to several solutions for each problem and it is often difficult to argue which is the most promising one, distinguishing between false and excessive enthusiasm and out-of-date caution. Controversies have arisen on the new developments of shock wave therapy, the management of ureteral and staghorn stones and the prevention of stone recurrence. These controversies are debated in this volume by the most outstanding experts from all over the world.

The second generation machines, as they are commonly named, have proved their efficacy in stone disintegration in a varied manner. In my opinion the standards of the Dornier HM-3 lithotripter have not been reached, but the new machines have other undeniable advantages. Piezo-electric generators provide anesthesia-free treatment without any effect on cardiac activity. Echographic reperage also allows treatment of radiolucent stones and avoids radiation exposure.

Multifunctional lithotripters can find a useful application in combined percutaneous and extracorporeal treatments, especially if a great number of treatments per day is not required. Future technical developments would provide a very effective, painless, outpatient stone management considering that the pattern of urinary lithiasis is already changing toward early treatment of small-size stones.

Ureteral stones can be managed in several ways: ESWL, percutaneous nephroureteroscopy, retrograde ureterorenoscopy, transurethral sling or basket extraction and open surgery.

By changing the position of the patient ESWL is becoming feasible in all the positions of the ureter. Ureteroscopy, too, has a higher degree of feasibility and can be safely applied especially to stones in the lower ureter.

The combination between these two techniques, in a variable fashion
according to the various authors, seems to leave little place to the other techniques, even if open surgery should still be advisable in the case of septic patients in the absence of certain urinary drainage. Percutaneous debulking followed by repeated ESWL sessions seems to become the treatment of choice for staghorn stones. Open surgery can come into play whenever a stenosis of the urinary tract is present and whenever something goes wrong in the sometimes long course of combined alternative treatment.

Last but not least, the impact of new techniques has not diminished the need for a prevention of stone recurrences. Potassium citrate seems to be the most promising drug for oxalate stone and hydroxamates seem to offer a good chance also in struvite stones. Hyperparathyroidism is still the most gratifying diagnosis for the urologist, being the only surgically and radically curable cause of renal stones.

The interesting and open discussion on this matter, that we had in Genoa during this course confirmed what I personally feel as of a few years, that is, that in this transition age, stone patients should be managed by stone centers which have all the alternative techniques at their disposal and can choose a line of therapy on the basis of a real cost/benefit ratio.

Luciano Giuliani

Acknowledgements

The editors are particularly grateful to Drs. Bottino, Germinale, Cavigli, Pittaluga, De Rose and Ricciotti, who were also excellent contributors, for their invaluable help in organizing this meeting and preparing these proceedings. The nursing staff of our Stone Center have to be commended for their enthusiasm in accepting the extra work during the preparation of the meeting. The Top Congress Company (Genoa, Italy) perfectly organized the meeting, with the generous contributions of our sponsors: Olympus International, Domier Medizintechnik, Squibb Italy, and Medas. Last thanks to the staff of Karger Publishers for their technical assistance.