

Book Reviews

Non-Invasive Destruction of Renal Calculi by Extracorporally Generated Shock Waves (in German) (Berührungsfreie Nierensteinzertrümmerung durch extrakorporal erzeugte fokussierte Stoßwellen). Eds.: Ch. Chaussy, G. Staehler. (Beiträge zur Urologie No. 2) Basel, London, New York: Karger 1980, 93 pp.

This is the first comprehensive presentation of a new method to destroy kidney stones by extracorporally produced shock waves. The principle which has now been successfully tested in animals and in clinical studies is the disintegration of stones by shock waves. These shock waves are generated outside the body by the underwater discharge of a condensor with sparking electrodes localised in one focus of an elliptic cavity and which have an amplitude of more than 1 kbar and a duration of less than 1 μ s. The shock waves formed are reflected at the stone which is positioned in the other focus of the ellipse. The calculus, like any material of density which differs from the wave conducting medium is exposed to powerful tear- and compressive forces, resulting in an abrupt disintegration into small peaces.

The technique which was developed by the Institute for Surgical Research and the Department of Urology of the University of Munich, with the technical assistance of the Dornier Co., was presented for the first time in 1976. Since then, it has been developed to a stage where the first series of patients has been treated.

The book gives a review of the physical basis and technology of the method and the results of in vitro testing and of animal experiments.

Studies on dogs in which stones had been artificially induced showed that such stones could be effectively disintegrated without damage to the surrounding tissue. If shock waves strike on tissues of very different density relative to the medium, as for example air-containing lung, rupture of other structures may occur.

This is the first method that allows treatment of kidney stones in a non-invasive way and may therefore have an interesting future in the treatment of stone disease.

The Editors

G. Brockis, B. Finlayson: Urinary Calculus. 495 p., Ns. figures and tables, 45 \$. Littleton/Mass.: PSG Publishing Comp. Inc. 1981

The volume contains 49 contributions presented at an International Conference on Urinary Calculi held in Perth, Australia, August 1979, which was attended by delegates from 22 countries. In Section I epidemiological questions are discussed; it is pointed out that incidence and prevalence can be defined only by special population screening. Such studies indicate that urolithiasis is far more common than is evident from analysis of hospital admission rates. On the other hand hospital statistics give interesting and important details of geographical, demographic, seasonal and clinical variations. Inherited or acquired metabolic disorders as causes of stone formation are presented in section II. It is suggested that the known in-born errors of metabolism probably account for about 5% and almost certainly for no more than 10% of all cases of urolithiasis. There

follows a special section (III) on endemic bladder stones because of the prevalence of this disease in countries immediately north of Australia. Recent studies suggest that inadequate intake of bio-available phosphate along with other dietary differences may be involved in the aetiology. It seems that substitution of rice for wheat in the bladder stone areas would be useful in the prevention and control of bladder stone.

Experimental studies are described in section IV. Useful information is given on methods for screening populations at risk of stones, for assessing patients who have stones, and for formulating and following a rational course of treatment for a given patient. Interesting studies on the role of different inhibitors and of urate in calcium urolithiasis are presented.

In section V new techniques are demonstrated: An ion-selective technique for measurement of urine calcium activity, a method for quantitative stone analysis and the method of isotachopheresis for oxalate measurement.

The last chapter (Section VI) presents the follow up of surgical patients as well as experience with Hemiacridin, Magnesium, Thiazide, Allopurinol and Diphosphinates.

An attractive book with many interesting aspects to broaden our knowledge about research and clinical experience on urolithiasis.

W. Vahlensieck (Bonn)

L. H. Smith, W. G. Robertson, B. Finlayson: Urolithiasis. Clinical and Basic Research. 1035 pp., Numerous Figures and Tables, 85 \$. New York and London: Plenum Press 1981

The proceedings of the Fourth International Symposium on Urolithiasis Research, held June 22–26, 1980 in Williamsburg, Virginia USA, is without doubt the most up-to-date and complete survey of basic and clinical research on urolithiasis. All disciplines investigating the formation of urinary stones as well as diagnostic and therapeutic problems are represented in 160 contributions. The first chapter contains new information about the clinical evaluation of risk factors on urinary excretion, the findings in patients with clinical disorders and the evaluation of specific treatment programmes. In the second chapter the epidemiology and the influence of nutrition and environment are discussed. In the next chapters new aspects of supersaturation in urine, primary nucleation site, crystal growth, aggregation and dissolution as well as to questions about inhibitors, promoters and the role of the matrix are discussed. In chapters 6 and 7 interesting aspects of the transport of crystal components by the gastrointestinal tract and kidney and the metabolism of calcium, oxalate, magnesium and urate are presented. New analytical procedures for stone analysis and the determination of lithogenic substances in urine are described in chapter VIII and IX.

Most contributions contain a list of references to give help for further studies. The index is good and the book well produced. It is a very instructive and impressive book, which all those involved with urolithiasis will find useful.

W. Vahlensieck (Bonn)