Introduction to Nephrolithiasis Part 2

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In this volume of Clinical Reviews in Bone and Mineral Metabolism are included additional in-depth, scholarly clinical reviews of nephrolithiasis. These reviews summarize the state of the art, report recent advances, and provide insight into areas of controversy.

Beara-Lasic et al. provide a comprehensive review of four rare monogenic disorders that cause kidney stones and kidney failure: primary hyperoxaluria, Dent disease, cystinuria, and APRT deficiency (the cause of dihydroxyadenine stones). Because of their rarity, all of these conditions may be misdiagnosed and the authors give a very useful discussion of clues to their diagnosis. They call particular attention to presumed widespread under diagnosis of APRT deficiency, whose features are not well known. As APRT deficiency causes progressive renal failure that is prevented by allopurinol, it is essential that these cases be diagnosed and treated.

Baum reviews pediatric urolithiasis. Important differences in adult urolithiasis emerge from her discussion, including the increased incidence in children of rare monogenic diseases (including those reviewed by Beara-Lasic et al.), the relative paucity of uric acid nephrolithiasis, the association of gross hematuria with hypercalciuria, and the utility of spot urine specimens in preference to 24-h urine collections. As in adults, hypercalciuria is the most common cause of stones in children.

Maalouf summarizes the approach to kidney stones in adults. He uses several illustrative cases to exemplify his approach. A scholarly review of the literature supports his recommendations. He points out risk factors for stones including occupation (e.g. hot environment), diet (e.g. high protein), family history, medications (e.g. triamterene, carbonic anhydrase inhibitors), prior surgery (e.g. gastric bypass, urinary diversion), and urinary risk factors. He includes a review of cost-benefit analysis that supports the value of metabolic evaluation.

Miller and Stoller provide a detailed review of urological management of stones. They include such useful information as predictors of ureteral stone passage, including not only size but position in the ureter and findings on CT scan. They compare the efficacy of analgesics, including narcotics, nonsteroidal anti-inflammatory drugs, and ADH analogs, and point out the inefficacy of forcing fluids to promote stone passage. They review the mechanism and efficacy of medical expulsive therapy with alpha blockers. And they provide a review of the use, mechanisms, and comparative merits of shock-wave lithotripsy and ureteroscopic retrieval and lithotripsy. Their review is valuable to both urologists and internists who care for patients with urolithiasis.

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