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Prostate-Specific Antigen and Screening for Prostate Cancer 245
Misop Han, Peter H. Gann, and William J. Catalona

This article discusses prostate-specific antigen (PSA) and screening for prostate cancer. Topics explored include the history of PSA testing, the biology of PSA, clinical uses of PSA testing, improving the accuracy of PSA testing, and controversies in prostate cancer screening.

Diagnosis and Treatment of Prostate Cancer 267
Javier Hernandez and Ian M. Thompson

Many controversies surround the management of prostate cancer to include screening practices, diagnosis, and treatment options. The lack of randomized prospective studies comparing the various definitive treatment modalities currently available occasionally can make the decision process challenging for patients and their providers. In this setting of controversy, the cost of treating clinically localized prostate cancer is significant. In the face of these unanswered questions, this article summarizes some important principles regarding the diagnosis and treatment of prostate cancer. This review is limited to the diagnosis and management of clinically localized disease.

Changing Aspects in the Evaluation and Treatment of Patients with Benign Prostatic Hyperplasia 281
John S. Lam, Kimberly L. Cooper, and Steven A. Kaplan

Lower urinary tract symptoms are common among men and a frequent reason for referral to an urologist. The most important information comes from the patient history because evaluation of symptoms is fundamental in the diagnosis and treatment planning for lower urinary tract symptoms. Other aspects of the initial evaluation, such as the physical examination and initial laboratory values, can provide valuable additional information about the severity
of the disease and the need for treatment. If treatment is warranted based on this information, additional diagnostic tests may be appropriate to set a pretreatment baseline, rule out other conditions, and plan treatment approach. Fortunately, a variety of effective medical and surgical treatments are available to treat this common disease.

Primary Care Update on Kidney and Bladder Cancer: A Urologic Perspective
Michael J. Droller

The past decade has witnessed many substantive changes in the approach to the diagnosis and treatment of both kidney and bladder cancer. In part, this is based on changes in the understanding of their carcinogenesis and pathogenesis, an appreciation of new concepts in their classification, and the incorporation of new technologies that have emerged. This article reviews advances and updates changes that have been made in the understanding of and approaches to these malignancies from the perspective of their urologic assessment and management while in the context of primary care issues.

Evaluation of the Patient with Hematuria
Edward J. Yun, Maxwell V. Meng, and Peter R. Carroll

Blood in voided urine, or hematuria, can originate from anywhere along the urinary tract and may be the only presenting sign of significant urologic disease. Refinements in imaging modalities and advances in endoscopic technologies have made the outpatient evaluation of hematuria simple, safe, and cost effective. An understanding of the potential etiologies for hematuria and diagnostic regimen by the primary care physician results in appropriate referral to a urologist and ensures that optimal treatment decisions, if needed, can be made in a timely manner. This article reviews the current literature and proposes the optimal, modern evaluation for patients presenting with hematuria.

Treatment Options for Female Urinary Incontinence
Suzette E. Sutherland and Howard B. Goldman

Urinary incontinence in women is a common and costly problem (psychologically, physically, and economically) and should not be accepted as a natural and inevitable part of aging. Accurate diagnosis of the type of incontinence is important to implement appropriate and successful treatment. In general, a focused medical and symptom-oriented history and physical examination is all that is needed to establish the correct diagnosis. Urge, stress, and mixed incontinence are the most common types seen in women. The successful treatment of urinary incontinence in a woman can lead to a substantial improvement in her overall quality of life.
Male Factor Infertility: Evaluation and Management 367
Victor M. Brugh, III and Larry I. Lipshultz

More couples than ever are seeking care for infertility. Half of these couples have a significant male factor. After identifying abnormal semen parameters, it is the caregiver’s responsibility to identify the etiology of the infertility and then treat appropriately. This article reviews the evaluation and treatment of the infertile male.

Erectile Dysfunction: Etiology, Evaluation, and Treatment Options 387
Allen D. Seftel, Mamdouh Ab Mohammed, and Stanley E. Althof

The evaluation and treatment of male sexual dysfunction has evolved into a more extensive evaluation. This new evaluation should now include evaluation of hypogonadism, ejaculatory function, lower urinary tract symptoms, and depression. The evaluation may be readily accomplished with the use of questionnaires. The management of these entities is discussed, including the novel phosphodiesterase-5 for male erectile dysfunction. Inclusion of the partner in the evaluation and management scheme will provide added benefit and may produce a better outcome.

Urinary Tract Infections in Women 417
Sean P. McLaughlin and Culley C. Carson

Urinary tract infections are extremely common bacterial infections with a variable spectrum of clinical morbidity. Structural and functional limitations contribute to increased susceptibility in pediatric, elderly, and pregnant female patients. Host factors, both genetic and acquired, also seem to increase susceptibility or offer protection toward subsequent recurrence by altering bacterial adherence. Treatment is predicated by location of the infection, patient functional status, and comorbidities. Recurrence or persistence warrants a thorough urologic evaluation, and in selected patients there are well-tolerated and appropriate antibiotic prophylaxis strategies.

Medical Management of Calcium Oxalate Urolithiasis 431
Robert E. Gerstenbluth and Martin I. Resnick

Dietary modifications and medical therapy can reduce the risk of urinary stone formation. Using the described stepwise approach, the medical management of stone disease should become a less daunting task for physicians. Unfortunately, the optimal medical and dietary management of urolithiasis remain uncertain and recurrent stone disease remains a significant cause of morbidity. Approaches to diagnosis and medical management have improved considerably in the last decade and it is hoped that well-designed studies in the near future will help further optimize management.
Diseases of the Adrenal Gland 443
E. Darracott Vaughan, Jr

It is fortunate that the ability to diagnose the specific adrenal entities that mandate a surgical approach is extremely accurate. The combination of analytic methodology to measure the appropriate adrenocortical and medullary hormonal production and the radiologic techniques for localization are superb. The management of these adrenal disorders usually using a laparoscopic approach following localization is highly successful, resulting in a reversal of both metabolic abnormalities and the hypertension that often accompanies these diseases. Indeed, this is a true success story with the evolution of these different techniques over the past 50 years.

Interstitial Cystitis: A Chronic Pelvic Pain Syndrome 467
J. Curtis Nickel

Interstitial cystitis, an enigmatic chronic pelvic pain syndrome that occurs primarily in women, is much more common than originally believed. Its etiology is unknown, its evaluation and diagnosis remain controversial, and its treatment is largely empiric. Recent basic and clinical research is unlocking some of the mystery surrounding this clinical syndrome. Diagnostic awareness, willingness to consider recently studied therapies, and reasonable therapeutic expectations on the part of both the physician and the patient seem to be the key to successful management of this condition.

Acute and Chronic Prostatitis 483
Vi N. Hua and Anthony J. Schaeffer

Prostatitis is a complex syndrome that spans a spectrum from acute prostatitis with a straightforward presentation to chronic prostatitis and chronic pelvic pain syndrome with a complex array of symptoms. The National Institutes of Health system of prostatitis categorization is a refinement of the traditional classification of prostatitis. The identification of prostatic or pelvic pain becomes a requirement for the diagnosis of chronic prostatitis. The role of bacteria as a cause in chronic prostatitis and chronic pelvic pain syndrome continues to be debated. The mainstream treatment of chronic prostatitis involves antimicrobials, nonsteroidal anti-inflammatory medications, and α-blockers.

Urologic Emergencies 495
Daniel Rosenstein and Jack W. McAninch

The primary care physician plays a key role in the diagnosis and initial management of most urologic emergencies. It is critical to stratify patients into those who require urgent care and those who require emergent care, because the time to therapy may significantly impact on outcome between these two groups. Mismanagement of these conditions may result in significant sequelae, which are
preventable in most cases. This article reviews the diagnosis and management of the most common urologic emergencies and highlights pragmatic information of use to the general practitioner. The following topics are reviewed in detail: genitourinary trauma, the acute scrotum, emergency conditions of the penis, and acute urinary retention.

Applications of Laparoscopic Surgery in Urology: Impact on Patient Care

Grant D. Taylor and Jeffrey A. Cadeddu

From its first use as a diagnostic tool, urologic laparoscopy has developed into a complex therapy for both benign and malignant disease. Most procedures are still performed at large centers with experienced laparoscopists but nonacademic urologists are starting to gain the necessary training and skills. With the clear advantage that laparoscopy shows over open procedures in terms of decreased perioperative morbidity and quicker recovery times, patients are increasingly asking for this approach. The urologic community must meet this challenge and train future urologists to meet the expected demand.

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