Epididymitis: A 21-Year Retrospective Review of Presentations to an Outpatient Urology Clinic

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Purpose: We describe patient characteristics and age distribution of epididymitis in an outpatient pediatric urology referral practice during a 21-year period.

Materials and Methods: We retrospectively reviewed all pediatric patients diagnosed with epididymitis or epididymo-orchitis (ICD9 604.9) either clinically or with the aid of scrotal ultrasound at Primary Children's Medical Center from 1992 through 2012. Charts were reviewed to record demographic and clinical features, as well as radiological and laboratory data. Multiple acute episodes occurring in individual patients were recorded.

Results: A total of 252 patients were identified. Mean ± SD age at first presentation was 10.92 ± 4.08 years. The majority of cases occurred during the pubertal period (11 to 14 years) and few patients younger than 2 years were diagnosed with epididymitis (4%). A total of 69 boys (27.4%) experienced a second episode of epididymitis. Scrotal ultrasound results were consistent with epididymitis in 87.3% of cases (144 of 165). Urine culture results were available in 38 patients and were positive in 7 (21%). Positive urine culture was associated with an anatomical abnormality on followup voiding cystourethrogram (RR 5.7, 95% CI 1.37–23.4). Physical activity was noted as a likely precipitating factor in 23 patients and a recent urinary tract infection was identified in 20.

Conclusions: The majority of cases of epididymitis occur around the time of puberty in early adolescence, with relatively few cases occurring during infancy. Recurrent episodes of epididymitis are more common than previously reported and may affect as many as a fourth of all boys with acute epididymitis.

Key Words: epididymis, epididymitis, puberty, urology

Abbreviations and Acronyms

AE = acute epididymitis

PCMC = Primary Children's Medical Center

TT = testicular torsion

US = ultrasound

VCUG = voiding cystourethrogram

Accepted for publication April 4, 2014.

Study received institutional review board approval.

Supported by a grant from American Medical Systems, Inc., Minnetonka, Minnesota.

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† Financial interest and/or other relationship with IVUmed.

ACUTE scrotal pain and swelling is a common pediatric urological presenting diagnosis at the emergency department. Causes of acute scrotum include testicular torsion, acute epididymitis and torsion of the appendix testis.[1,2] The reported incidence of acute epididymitis varies widely between published series, accounting for 10% to 71% of presentations for acute scrotal pain.[1–5] Although older studies have shown that testicular torsion is the most common etiology of acute scrotal pain, more recent series reveal an incidence of acute epididymitis equal to or exceeding testicular torsion.[6,7]

Little is known about the pathoetiology of AE in the pediatric population. The literature on the subject is divided regarding peak age at presentation, with some studies suggesting a bimodal distribution in childhood, while others demonstrate a peak incidence around the time of puberty or in late adolescence.[1,2,4,6,8]

0022-5347/14/1924-1203/0
THE JOURNAL OF UROLOGY®

http://dx.doi.org/10.1016/j.juro.2014.04.002
Vol. 192, 1203-1207, October 2014
Printed in U.S.A.

Furthermore, there is no consensus about the specific risk factors associated with development of AE in childhood or the extent of diagnostic evaluation children should undergo to rule out an underlying anatomical abnormality of the genitourinary tract. We describe the characteristics and age distribution of epididymitis in an outpatient pediatric urology referral practice by presenting the largest known single institutional pediatric series.

MATERIALS AND METHODS

After receiving institutional review board approval we conducted a retrospective review of all boys who presented to the pediatric urology clinic at PCMC from January 1992 through December 2012 for consultation following an episode of acute scrotal pain for which testicular torsion had been ruled out with a diagnosis of epididymitis. PCMC is the secondary and tertiary care center for the greater Salt Lake City metropolitan area, and serves as the major tertiary referral center for the remainder of Utah and portions of Idaho, Wyoming, Montana and Nevada. All patients were evaluated by one of 5 board certified pediatric urologists.

Data Collection

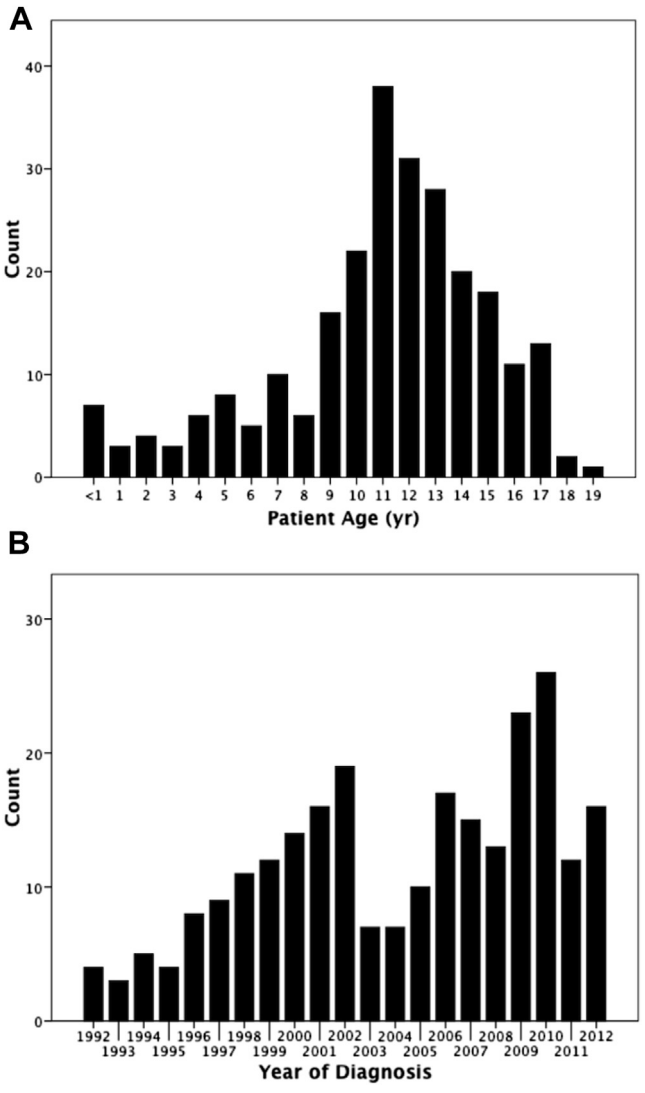
All patients with an ICD9 code of 604.9 (epididymitis or epididymo-orchitis) in the clinical electronic medical records archive system with or without radiological confirmation of AE were eligible for inclusion. Clinically acute epididymitis was defined as the presence of a swollen, indurated epididymis that was tender to palpation. Radiological evidence supporting the diagnosis included an enlarged epididymis showing increased flow. Cases coded with other causes of the acute scrotum, eg TT and torsion of the appendix testis, were excluded from the analysis. Charts were reviewed for historical information including patient age at first diagnosis of AE, interval between symptom onset and seeking medical attention, and medical and surgical history. Most patients were initially seen elsewhere and referred to the urology clinic for followup. Clinical data including presence of recurrent disease, laterality, diagnosis of urinary tract infection, and voiding and bowel habits were obtained. Results of diagnostic tests including urinalysis, urine culture, scrotal US and VCUG were reviewed, and pertinent data including genitourinary malformations were recorded if present. When available, information regarding physical activity was also noted.

Statistical Analysis

Categorical data were analyzed using the Fisher exact test. For the purposes of analysis prepubescent was considered 10 years or younger, and pubertal 11 years or older.[9] Previously established predictors for detecting a genitourinary abnormality in patients with AE, which include presence of a positive urine culture, recurrent epididymitis and age younger than 1 year, were compared with VCUG results, and relative risks and 95% CI were calculated. SPSS®, version 19 was used for data analysis.

RESULTS

A total of 252 patients identified with a diagnosis of epididymitis or epididymo-orchitis were included in the study. Mean ± SD age at first diagnosis of epididymitis was 10.92 ± 4.1 years, with a peak at age 11 (see figure). Median time from symptom onset to presentation at the pediatric urology clinic was 5 days. However, 34% of patients presented with symptoms that had been present for 1 week or more. A total of 69 patients (27.4%) experienced a second episode of epididymitis (recurrent epididymitis) during the study period. The timing of recurrent episodes ranged from 2 weeks to 60 months, with the majority observed between 2 and 6.3 months (IQR). Circumcision information was available for 87 patients, of whom 69 (79.3%) were circumcised.



A, distribution of cases by age at diagnosis. *B*, distribution of cases by year, 1992 to 2012.