Nonacute Scrotal Pain in Adolescents

Shlomo Zvieli, MD, Leah Vinter, RN, and Joseph Herman, MD
Beer Sheva, Israel

Nonacute scrotal pain in adolescent boys has received scant attention in the literature. It is not mentioned at all in several standard textbooks of pediatrics,[1] urology,[2] adolescent medicine,[3,4] family medicine,[5] or ambulatory care.[6] Scrotal pain is discussed cursorily in *French's Index of Differential Diagnosis,*[7] with no particular reference to adolescence. Several case reports reviewed by Yeates[8] have associated scrotal pain with aneurysms of the lower aorta and iliac arteries, concealed inguinal hernias, lumbar discopathy, diabetic neuropathy, and the formation of a sperm granuloma after vasectomy.[9–13] These conditions, however, occur infrequently in teenaged boys.

In a review of the medical records of patients belonging to a single family practice, it was found that 12 boys aged 12 to 15 years had complained of nonacute scrotal pain over the course of two years, making the observed prevalence 2 percent. As it was suspected that this finding was but the tip of a "clinical iceberg," 118 consecutive seventh and ninth graders, presenting for a well-adolescent examination, were questioned about the symptom. The results of the survey are presented here.

METHODS

In the course of well-adolescent care, every boy in the seventh (aged 12 to 13 years) and the ninth grades (aged 14 to 15 years) is questioned about his medical history, current illnesses, and disabilities and is given a physical examination that includes height and weight measurement, blood pressure recording, auscultation of the lungs and heart, and screening for skin infections, acne, developmental foot disorders, and scoliosis. The genitals are inspected and palpated, and the stage of sexual maturation is determined by the Tanner method.[14] Finally, the findings are discussed briefly with each examinee.

The present survey included 118 boys presenting for routine interview and examination, 60 of whom were from the seventh grade and 58 of whom were from the ninth. Each was asked whether on occasion he suffered from pain in the genitals. The answer was noted affirmative when the boy referred specifically to the scrotum and used the terms "frequently," "usually," or "many times."

The statistical analysis included calculation of percentages with confidence intervals, chi-square analysis for trend, and Fisher's exact test for 2×2 tables.

RESULTS

Table 1 shows developmental characteristics of the patients in the survey. Seventeen percent of the seventh graders and 71 percent of the ninth graders were in the two highest Tanner stages, as would be expected from the age differential.

Table 2 presents the frequency of scrotal pain according to school grade, stratified by Tanner stages of maturation. The overall prevalence of the complaint was 21.2 percent. It was more prevalent in the higher grade (29.3 percent) than in the lower one (13.3 percent, $P < .05$). The prevalence of nonacute scrotal pain is associated with sexual

TABLE 1. CHARACTERISTICS OF THE EXAMINED GROUP, BY GRADE

Characteristic	7th Grade (N = 60)	9th Grade (N = 58)
Age in years, mean (SD)	12.6 (0.4)	14.2 (0.3)
Sexual maturation (%) by Tanner method[14]		
Stage 1 (prepubertal)	27	2
Stage 2	38	10
Stage 3	18	17
Stage 4	17	50
Stage 5	—	21

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From the Family Medicine Clinic, Workers' Sick Fund, Kfar Maimon, the Department of Family Medicine, Division of Primary Care, Faculty of the Health Sciences, Ben-Gurion University of the Negev, Beer Sheva, and Israel Defense Forces–Medical Corps, Israel. Requests for reprints should be addressed to Dr. Shlomo Zvieli, Department of Family Medicine, Faculty of the Health Sciences, Ben-Gurion University of the Negev, Beer Sheva, Israel 84105.

TABLE 2. FREQUENCY OF NONACUTE SCROTAL PAIN AMONG ADOLESCENTS, BY GRADE AND STAGE OF SEXUAL MATURATION

Tanner Maturation Stage	7th Grade With Scrotal Pain		9th Grade With Scrotal Pain		Total With Scrotal Pain	
	No.	No. (%)	No.	No. (%)	No.	No. (%)
Stage 1	16	— (—)	1	— (—)	17	— (—)
Stage 2	23	2 (8.7)	6	1 (16.7)	29	3 (10.3)
Stage 3	11	3 (27.3)	10	3 (30.0)	21	6 (28.6)
Stage 4	10	3 (30.0)	29	11 (37.9)	39	14 (35.9)
Stage 5	—	— (—)	12	2 (16.7)	12	2 (16.7)
Total	60	8 (13.3)*	58	17 (29.3)*	118	25 (21.2)**

$\chi^2 = 7.26$ $P < .01$
** 95% confidence intervals = 4.4–21.6% and 17.0–41.0%, respectively. $P < .05$*
*** 95% confidence interval = 13.7–28.7%*

TABLE 3. ASSOCIATION OF PRIMARY VARICOCELE WITH NONACUTE SCROTAL PAIN IN ADOLESCENTS

	With Pain No. (%)	Without Pain No. (%)	Total No. (%)
With varicocele	7 (28.0)	6 (6.5)	13 (11.0)
Without varicocele	18 (72.0)	87 (93.5)	105 (89.0)
Total	25 (100.0)	93 (100.0)	118 (100.0)

$\chi^2 = 7.3$, df = 1, $P < .01$

maturation, being nonexistent at the prepubertal stage, increasing sharply to a peak at stage 4, and then declining ($P < .01$, χ^2 test for trend).

Thirteen (11 percent) of the boys in the survey were found to have a left varicocele. Table 3 presents the cross-tabulation of scrotal pain and varicocele. There is an apparent association between the two phenomena ($P < .01$, Fisher's exact test), although 72 percent of examinees with scrotal pain did not have a varicocele. No other scrotal abnormality was discovered. A right inguinal hernia was found in two boys who did not complain about scrotal pain.

COMMENT

The findings of this survey indicate that nonacute scrotal pain is a common symptom in adolescence. Most boys, however, do not complain of their own accord, possibly because they are reticent about discussing issues related to the genitals. An attempt to elicit this complaint in the course of a well-adolescent examination can relieve the apprehension that is one of its concomitants.

A left varicocele was found in 28 percent of the patients who reported experiencing nonacute scrotal pain and in only 6.5 percent of those who did not, suggesting that this finding may explain some instances of the disorder. On the other hand, 46 percent of patients with a varicocele did not complain of pain, so that if there is an association between the two, it is not a very strong one.

The adolescent, in the early stages of maturation (Tanner stages 2 through 4), is exposed to rapid changes in the sensitivity of his genitals to a given level of sex hormones, rendering him susceptible to spontaneous erections and sexual arousal even without specific stimuli.[15] Such erections, together with those occurring in the course of masturbation or heavy petting without orgasm, can lead to sustained venous engorgement, which could prove painful.[16]

Although this investigation is preliminary and there is as yet no follow-up, its results show that nonacute scrotal pain is prevalent in adolescents. Furthermore, the apparent decline in frequency among boys in Tanner stage 5 as compared with those in stage 4 suggests that the disorder is benign and self-limited. It can be a cause of anxiety that greater awareness on the part of the primary care team can help allay.

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