

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 Yeates⁸ 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

Submitted, revised, August 8, 1988.

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.

References

1. Rudolph AM (ed): Pediatrics, ed 16. New York, Appleton-Century-Crofts, 1977
2. Kelalis PP, King LR, Belman AB (eds): Clinical Pediatric Urology, ed 2. Philadelphia, WB Saunders, 1985
3. Hofmann AD: Adolescent Medicine. Reading, Mass, Addison-Wesley, 1983
4. Shen JTY: The Clinical Practice of Adolescent Medicine. New York, Appleton-Century-Crofts, 1980
5. Rakel RE (ed): Textbook of Family Practice, ed 3. Philadelphia, WB Saunders, 1984

continued on page 230

INDICATIONS AND USAGE: HALCION Tablets are indicated in the short-term management of insomnia characterized by difficulty in falling asleep, frequent nocturnal awakenings, and/or early morning awakenings. It is recommended that HALCION not be prescribed in quantities exceeding a one-month supply.

CONTRAINDICATIONS: Patients with known hypersensitivity to this drug or other benzodiazepines.

HALCION is contraindicated in pregnant women due to potential fetal damage. Patients likely to become pregnant while receiving HALCION should be warned of the potential risk to the fetus.

WARNINGS: Overdosage may occur at four times the maximum recommended therapeutic dose. Patients should be cautioned not to exceed prescribed dosage.

Because of its depressant CNS effects, patients should be cautioned against engaging in hazardous occupations requiring complete mental alertness and also about the simultaneous ingestion of alcohol and other CNS depressant drugs.

Anterograde amnesia and paradoxical reactions have been reported with HALCION and some other benzodiazepines.

PRECAUTIONS: *General:* In elderly and/or debilitated patients, treatment should be initiated at 0.125 mg to decrease the possibility of development of oversedation, dizziness, or impaired coordination. Some side effects, including drowsiness, dizziness, lightheadedness, and amnesia, appear to be dose related.

Some evidence suggests that confusion, bizarre or abnormal behavior, agitation, and hallucinations may also be dose related, but this evidence is inconclusive. It is recommended that therapy be initiated at the lowest effective dose. Caution should be exercised in patients with signs or symptoms of depression which could be intensified by hypnotic drugs. Suicidal tendencies and intentional overdosage is more common in these patients. The usual precautions should be observed in patients with impaired renal or hepatic function and chronic pulmonary insufficiency. *Information for Patients:* Alert patients about: (a) consumption of alcohol and drugs, (b) possible fetal abnormalities, (c) operating machinery or driving, (d) not increasing prescribed dosage, (e) possible worsening of sleep after discontinuing HALCION. *Laboratory Tests:* Not ordinarily required in otherwise healthy patients. *Drug Interactions:* Additive CNS depressant effects with other psychotropics, anticonvulsants, antihistaminics, ethanol, and other CNS depressants. Pharmacokinetic interactions of benzodiazepines with other drugs have been reported, e.g., coadministration with either cimetidine or erythromycin approximately doubled the elimination half-life and plasma levels of triazolam, hence increased clinical observation and consideration of dosage reduction may be appropriate. *Carcinogenesis, Mutagenesis, Impairment of Fertility:* No evidence of carcinogenic potential was observed in mice during a 24-month study with HALCION in doses up to 4000 times the human dose. *Pregnancy:* Benzodiazepines may cause fetal damage if administered during pregnancy. The child born of a mother who is on benzodiazepines may be at some risk for withdrawal symptoms and neonatal flaccidity during the postnatal period. *Nursing Mothers:* Administration to nursing mothers is not recommended. *Pediatric Use:* Safety and efficacy in children below the age of 18 have not been established.

ADVERSE REACTIONS: During placebo-controlled clinical studies in which 1003 patients received HALCION Tablets, the most troublesome side effects were extensions of the pharmacologic activity of HALCION, e.g., drowsiness, dizziness, or lightheadedness.

	HALCION	Placebo
Number of Patients	1003	997
% of Patients Reporting:		
Central Nervous System		
Drowsiness	14.0	6.4
Headache	9.7	8.4
Dizziness	7.8	3.1
Nervousness	5.2	4.5
Lightheadedness	4.9	0.9
Coordination Disorder/Ataxia	4.6	0.8
Gastrointestinal		
Nausea/Vomiting	4.6	3.7

In addition, the following adverse events have been reported less frequently (i.e., 0.9-0.5%): euphoria, tachycardia, tiredness, confusional states/memory impairment, cramps/pain, depression, visual disturbances.

Rare (i.e., less than 0.5%) adverse reactions included constipation, taste alterations, diarrhea, dry mouth, dermatitis/allergy, dreaming/nightmares, insomnia, paresthesia, tinnitus, dysesthesia, weakness, congestion, death from hepatic failure in a patient also receiving diuretic drugs.

The following adverse events have been reported in association with the use of HALCION and other benzodiazepines: Amnesic symptoms, confusional states, dystonia, anorexia, fatigue, sedation, slurred speech, jaundice, pruritus, dysarthria, changes in libido, menstrual irregularities, incontinence and urinary retention.

Other events reported include: Paradoxical reactions such as stimulation, agitation, increased muscle spasticity, sleep disturbances, hallucinations, aggressiveness, falling, somnambulism, inappropriate behavior, and other adverse behavioral effects. Should these occur, use of the drug should be discontinued.

No laboratory changes were considered to be of physiological significance.

When treatment is protracted, periodic blood counts, urinalysis and blood chemistry analyses are advisable.

Minor changes in EEG patterns, usually low-voltage fast activity have been observed in patients during HALCION therapy and are of no known significance.

DRUG ABUSE AND DEPENDENCE: *Controlled Substance:* HALCION Tablets are a Controlled Substance in Schedule IV. *Abuse and Dependence:* Withdrawal symptoms have occurred following abrupt discontinuance of benzodiazepines. Patients with a history of seizures are at particular risk. Addiction-prone patients should be closely monitored. Repeat prescriptions should be limited to those under medical supervision.

OVERDOSAGE: Because of the potency of triazolam, overdosage may occur at 2 mg, four times the maximum recommended therapeutic dose (0.5 mg). Manifestations of overdosage include somnolence, confusion, impaired coordination, slurred speech, and ultimately, coma. Respiration, pulse, and blood pressure should be monitored and supported by general measure when necessary. Immediate gastric lavage should be performed. Multiple agents may have been ingested.

Store at controlled room temperature 15°-30°C (59°-86°F).

Caution: Federal law prohibits dispensing without prescription.

B-5-S

Reference: 1. NIMH Consensus Conference: Drugs and insomnia: The use of medications to promote sleep. *JAMA* 1984;251:2410-2414.

continued from page 227

- Barker LR, Burton JR, Zieve PD (eds): Principles of Ambulatory Medicine. Baltimore, Williams & Wilkins, 1982
- Griffiths IH: Testicle pain. In Dudley-Hart F (ed): French's Index of Differential Diagnosis, ed 10. Bristol, England, John Wright & Sons, 1973, p 755
- Yeates WK: Pain in the scrotum. *Br J Hosp Med* 1985; 33(2): 101-104
- Artman MR, Burkle FM Jr: Acute abdominal aortic aneurysm presenting as isolated testicular pain. *Am J Emerg Med* 1987; 5(1): 45-47
- White SH, Leslie LJ: Pain in scrotum due to intervertebral disc protrusion. *Lancet* 1986; 1:504
- Ali MS: Testicular pain in a patient with aneurysm of the common iliac artery. *Br J Urol* 1983; 55:447-448
- Clarke BF, Ewing DJ, Campbell IW: Clinical features of diabetic autonomic neuropathy. *Horm Metab Res (Suppl)* 1980; 9:50-60
- Shapiro EI, Silber SJ: Open-ended vasectomy, sperm granuloma and postvasectomy orchialgia. *Fertil Steril* 1979; 32:546
- Tanner JM: Growth at Adolescence, ed 2. Oxford, England, Blackwell Scientific, 1962
- Gessel A, Ilg FL, Ames LB: Youth—The Years from Ten to Sixteen. New York, Harper & Row, 1956, p 149
- Gallagher JR, Heald F, Garell DD: Medical Care of the Adolescent, ed 3. New York, Appleton-Century-Crofts, 1976, p 670