

Updates in Pediatric Urology

Highlights of the American Academy of Pediatrics Section on Urology Annual Meeting, October 7-9, 2006, Atlanta, GA

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Key words: Circumcision • Cryptorchidism • Dermabond • Double-J stent • Orchiopexy • Varicocele

The 2006 meeting of the American Academy of Pediatrics Section on Urology was held in Atlanta, Georgia, October 7-9. Papers and posters were presented on a wide range of topics, including cryptorchidism, varicocele, exstrophy, sexual differentiation, reflux, hypospadias, neurogenic bladder, hydronephrosis, valves, and voiding dysfunction. A master class was held on bladder procedures for urinary continence, and an informative panel of pediatric urologists and surgeons discussed the challenges of managing patients with cloacal exstrophy.

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Dr. Barry A. Belman received the prestigious Pediatric Urology Medal from the Section on Urology. Dr. Belman is professor of urology and pediatrics at the George Washington University School of Medicine and Chairman Emeritus in the Department of Urology at the Children's National Medical Center. He is best known for his contributions to pediatric urology in the areas of hypospadias, the adolescent varicocele, vesicoureteral reflux, and urinary tract infections. Dr. Belman has been a coeditor of the gold standard textbook of pediatric urology, *Clinical Pediatric Urology*.

The meeting was attended by pediatric urologists from North America, South America, Europe, and Asia. Several of the clinical research abstracts are highlighted in this review.

Varicocele

Diamond and the investigators from Children's Hospital Boston¹ reported on the relationship of grade and hypotrophy to semen parameters in adolescent boys with varicocele. High varicocele grade and testicular hypotrophy have been indications for surgical intervention. This study correlates these findings with semen parameters. Fifty-one Tanner stage V males aged 14 to 21 years provided semen specimens. Varicoceles were graded and sonographic testicular volumes obtained. The study shows that there is no correlation between varicocele grade and total motile sperm counts. There was an inverse correlation between differential testicular volume and total motile sperm counts, suggesting that patients with larger volume differentials have significantly lower sperm counts. It

appears that volume differentials greater than 10% suggest a significant difference when compared with volume differentials less than 10%. Although this study is important, the sperm counts in some of the patients are based on only 1 semen analysis. The study was awarded the First Prize in Clinical Research sponsored by the American Association of Pediatric Urology.

Cryptorchidism

Kollin and colleagues² from the Karolinska Institute in Stockholm reported on an interesting study that

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randomized boys with cryptorchidism to orchiopexy at age 9 months or 3 years. The objective of the study was to determine whether early treatment leads to improved growth when compared with later treatment in childhood. Seventy-two boys were randomly assigned at 6 months of age to surgical treatment at 9 months (early orchiopexy), and 83 boys were assigned also at 6 months of age to orchiopexy at 3 years. The boys were followed annually up to age 4 years. Testicular volume was determined by ultrasound. A baseline study was obtained at 6 months of age. A significant increase in median testicular volume at each year of follow-up was demonstrated in the early surgical treatment group (age 9 months) when compared with the baseline volume. In the children undergoing orchiopexy at age 3 years, no significant growth was demonstrated during the same time period, with a significant difference in median volumes at ages 2 to 4 years. The study shows partial catch-up growth in those undergoing early orchiopexy (age 9 months) up until age 4 years

when compared with the treatment group at age 3 years. This randomization and its findings are novel and important. The presentation was awarded a Second Prize for Clinical Research.

Yucel and the investigators at Southwestern Medical Center³ examined the management of abdominal testes located near the internal ring. The study examined 43 testes in boys aged 6 to 36 months that were within 2 cm of the internal ring. In 35 boys, there was mobility to the contralateral internal ring; of these 35 patients, 24 were found to have insignificant length to attain a dependent scrotal

position. In these cases, laparoscopic orchiopexy to a high scrotal position or a 1-stage Fowler-Stephens procedure was performed. Laparoscopic orchiopexy was performed in 29 patients (67%), with 9 procedures to the high scrotum. Fifteen testes were managed with the 1-stage Fowler-Stephens procedure to a dependent scrotal position. Two testes had poor mobility, and a 2-stage Fowler-Stephens was performed. Two of the orchiopexies were "redo" surgeries for

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testes placed only in the high scrotum. Atrophy occurred in 13% of the laparoscopic orchiopexies and in 12% of the 1-stage Fowler-Stephens procedures. The study suggests that proximity to the internal ring and mobility to the opposite internal ring do not accurately predict a successful laparoscopic orchiopexy to the dependent scrotum. Therefore, the optimal management of the intra-

abdominal testis near the internal ring remains uncertain.

Circumcision

Elmore and colleagues⁴ at Emory demonstrated the safety and efficacy of sutureless circumcision using 2-octyl cyanoacrylate (2-OCA; Dermabond; Ethicon, Somerville, NJ). Seventy patients, mean age 4 years, underwent a circumcision or circumcision revision using 2-OCA for skin closure. The closure time ranged from 30 seconds to 3 minutes, and the cosmetic outcomes were improved when compared with conventional suturing because there were no suture tracks. 2-OCA may be used alone or as an adjunct to subepithelial sutures.

Miscellaneous

Palmer and Palmer⁵ reported on a simple and reliable formula for choosing the appropriate length double-J (JJ) stent in children. These investigators performed a retrospective review of 153 children undergoing JJ stent placement including their age and the length of the stent placed. In a stent of the appropriate length, there is a gentle curve of the distal coil within the bladder, which may be visualized cystoscopically, and the proximal coil is within the collecting

system, which may be confirmed by sonogram or fluoroscopy. The age range of the patients was 2 months to approximately 18 years. Regression analyses demonstrated a consistent relationship between the patient's age and the JJ stent length. The formula they derived is: stent length = patient age (years) + 10. This study is very useful and does not depend on gender or laterality. ■

References

1. Diamond DA, Bauer SB, Borer JG, et al. Relationship of grade and hypotrophy to semen parameters in adolescent boys with varicocele [abstract 6]. Presented at: American Academy of Pediatrics Section on Urology Annual Meeting; October 7-9, 2006; Atlanta, GA.
2. Kollin CA, Heser U, Ritzen M, Karpe B. Surgical treatment of undescended testes. Testicular growth after randomization to orchidopexy at age 9 months or 3 years [abstract 7]. Presented at: American Academy of Pediatrics Section on Urology Annual Meeting; October 7-9, 2006; Atlanta, GA.
3. Yucel S, Baker L, Harrison C, Snodgrass W. Abdominal testes near the internal ring present a dilemma for management [abstract 13]. Presented at: American Academy of Pediatrics Section on Urology Annual Meeting; October 7-9, 2006; Atlanta, GA.
4. Elmore JM, Smith EA, Kirsch AJ. Sutureless circumcision using 2-octyl cyanoacrylate (Dermabond) [abstract 10]. Presented at: American Academy of Pediatrics Section on Urology Annual Meeting; October 7-9, 2006; Atlanta, GA.
5. Palmer JS, Palmer LS. What JJ stent length to use? A simple and reliable formula is patient age + 10 [abstract 1]. Presented at: American Academy of Pediatrics Section on Urology Annual Meeting; October 7-9, 2006; Atlanta, GA.

Main Points

- A study from Children's Hospital Boston showed that there is no correlation between varicocele grade and total motile sperm counts. There was an inverse correlation between differential testicular volume and total motile sperm counts, suggesting that patients with larger volume differentials have significantly lower sperm counts.
- A Karolinska Institute study of boys undergoing orchiopexy at 9 months or 3 years of age demonstrated a significant increase in median testicular volume at each year of follow-up in the early surgical treatment group compared with the baseline volume. In the children undergoing orchiopexy at age 3 years, no significant growth was demonstrated during the same time period, with a significant difference in median volumes at ages 2 to 4 years.
- In a study of abdominal testes located near the internal ring, atrophy occurred in 13% of laparoscopic orchiopexies and 12% of 1-stage Fowler-Stephens procedures, suggesting that proximity to the internal ring and mobility to the opposite internal ring do not accurately predict a successful laparoscopic orchiopexy to the dependent scrotum.
- Emory University investigators demonstrated the safety and efficacy of sutureless circumcision using 2-octyl cyanoacrylate (Dermabond). Dermabond may be used alone or as an adjunct to placement of subepithelial sutures.
- Regression analyses from a retrospective review of 153 children who received double-J stents demonstrated a consistent relationship between patient age and stent length. The formula the investigators derived is: stent length = patient age (years) + 10.