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Undescended testis in older boys: further evidence that ascending testes are common

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Abstract

Introduction: We recommend orchiopexy between 9 and 18 months of age for surgical, testicular, and psychological reasons. However, in practice, we observed many patients coming to orchiopexy at a later age. To understand this difference better, we reviewed our experience with patients undergoing late orchiopexy.

Methods: We reviewed retrospectively the office medical records of all boys who had undergone an orchiopexy between July 1997 and April 2006. We defined a "late" orchiopexy as that performed at 4 years of age or later. Each boy was examined carefully by a pediatric urologist, and preoperative, intraoperative, and postoperative findings were reviewed.

Results: There were 191 late orchiopexies in 177 patients (from a total of 587 orchiopexies in 552 patients). Median age at the operation was 7.2 years (range, 4.0-16.2). Preoperatively, the testes were palpable in 140 (72%) and nonpalpable in 51 (28%). The apparent reason for the late orchiopexy was an ascending testis (previously descended) in 85 (45%), parental delay in 41 (22%), late referral in 39 (20%), and iatrogenic cryptorchidism in 18 (9%). Ascended testes were more likely to have a history of being retractile (85% vs 30%), to have a patent processus vaginalis (78% vs 54%), and to be localized to the superficial inguinal area (87% vs 50%).

Conclusions: Primary care provider and parent education on the benefits of early orchiopexy is important, but in addition, ascending testes are much more common than previously thought. Patients with retractile testes should be followed regularly.

The most common genital abnormality identified at birth in males is an undescended testis. About 30% of premature and low birth weight babies have at least one undescended testis, as do 2% to 5% of term babies. Many descend spontaneously so that approximately 0.8% of 1-year-old boys have an undescended testis [1-3]. Nevertheless, rates of orchiopexy have been reported as 2% to 3% of males by age 14 to 17 years, and these rates are higher than the reported childhood prevalence of undescended testes [2-6]. The reason that so many more orchiopexies are performed than the prevalence of undescended testes is unclear. However, recently ascending testis has been suggested to be one explanation for the increased rate of orchiopexies [7-9].

The recommended age of orchiopexy is between 9 and 18 months. This is based on a summary of surgical, anesthetic,

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and psychological reasons [10]. In addition, studies have shown irreversible histological changes in undescended testes starting by the second year of life [11]. We do not know whether these changes are preventable or reversible, but they support the concept of orchiopexy early in life. In our practice however, we observed many patients coming to orchiopexy at a later age. To understand more about why this happens and the consequences of this, we reviewed our experience with patients undergoing late orchiopexy.

1. Patients and methods

We reviewed retrospectively the office medical records of all boys who were at least 4 years old and underwent orchiopexy for an undescended testis between July 1997 and April 2006. Each boy was examined carefully by a pediatric urologist (B.A.K.), palpating the scrotum and inguinal region. In general, patients were examined in a frog-leg position and in a warm room. We also attempted to distract the children from their physical examination to minimize the effect of the cremasteric reflex. Accepting that palpation of testicular position is an inexact science, a descended testis was defined as a testis that could be brought to a midscrotal position, and an undescended testis was defined as a testis that could not be brought into the scrotum by disabling the cremasteric reflex on physical examination. In contrast, a retractile testis was defined as a normally developed testis that may at times be above the scrotum but which could be brought into the scrotum on routine physical examination. There is no population screening in our area; therefore, an ascended testis was defined a one that had previously been documented to be in the scrotum (by a primary care provider or by us) that later was diagnosed as undescended. It was felt that none of the patients undergoing orchiopexy had retractile testes because all patients operated on had testes out of the scrotum under anesthesia.

The medical records were reviewed for the following pre-, per-, and postoperative aspects. Preoperative position of the testis was classified as palpable or nonpalpable. Based on the medical records, the reason for delay in orchiopexy were categorized into 5 groups; ascending testis (previously documented scrotal testis by either a primary care provider or us, which became undescended), parent's delay (often reported as being afraid to have surgery), late referral (eg, parents told to wait by their primary care provider who felt the testis would descend eventually or insurance problem), iatrogenic (trapped following ipsilateral groin surgery), and unknown (not able to be ascertained from the records). We recognize that there can be some overlap in the reasons; therefore, we used the closest descriptor of the reason for the delay. We also recorded whether there was a history of retractile testis, the age at the first visit, and the age at the operation to figure out preoperative follow-up time.

Orchiopexy was performed using the conventional technique of placing the testis in the subdartos space by same pediatric urologist (B.A.K.). Intraoperative testis position was defined as superficial inguinal pouch (testis was beyond the external ring), canalicular (testis was between internal and external inguinal rings), abdominal (testis was proximal to the internal ring), and perineal (testis found in the perineal region outside the usual anatomic path of testicular descent). The persistence of a patent processus vaginalis was based on the operative findings. In addition, the connection between the testis and epididymis was noted as complete separation of the epididymis from the testis, flimsy attachment, or normal.

All children having orchiopexy were seen at after the day of their operation and at the third months to evaluate the final position and the size of the testis.

To assess any potential association between categorical variables, we performed statistical analysis using Pearson χ^2 with Statistical Package for the Social Science (version 11; SPSS, Inc, Chicago, IL). Kaplan-Meier log-rank test was used for comparison of follow-up time. Statistical significance was accepted at a P value of $<.05$.

2. Results

From 587 orchiopexies (197 right, 272 left-sided, and 59 bilateral) in 552 patients, 191 orchiopexies (87 right, 74 left-sided, and 15 bilateral) in 177 boys 4 years or older were evaluated. For patients who underwent late orchiopexies, the median age at the first visit was 6.1 years (range, 1.8-15.8), and the median age at the time of surgery was 7.2 years (range, 4.0-16.2).

The distribution of 191 late orchiopexies with respect to apparent reason for the delay were categorized as follows: ascending testis 85 (45%), parent's delay 41 (22%), late referral or insurance problem 39 (20%), trapped after

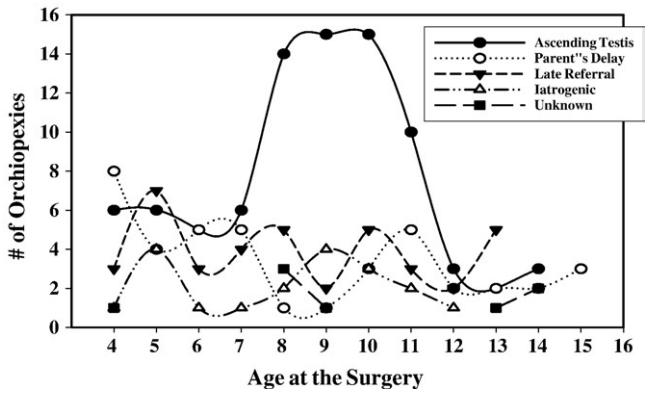

Fig. 1 The numbers of orchiopexies vs age at the operation with respect to the reason for late orchiopexy. The rate for most was steady throughout childhood, but there was a striking peak around 8 to 11 years of age in the ascending testes.