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Evaluation of Children with Undescended Testes Referred to Children's Medical Center in 5 years

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Abstract

Introduction: Cryptorchidism is the most common congenital anomaly in male genitalia in newborns with a frequency of 3% in term and 30% in preterm male newborns. Cryptorchidism is also known as undescended testis (UDT), which can be bilateral or unilateral. The aim of the study was to evaluate all cases with UDT referred to our center during 5 years.

Materials and Method: All UDT cases that were referred to Children's Medical Center during the last 5 years were included in our retrospective study. The data were collected from the patients' records and one medical student entered the data in the questionnaire designed for the study.

Results: A diagnosis of UDT was made at the time of birth in 122 (62.2%) of 196 cases, until one year of age in 153 (78.06%) cases, until two years of age in 161 (82.14%), until six years of age in 186 (94.89%) cases, and until 11 years of age in 196 (100%) cases. The age at surgery was under 1 year in 52 (26.53%) cases, between 1 and 2 years in 42 (21.24%) cases, between 2 and 6 years in 68 (34.69%) cases, and over 6 years in 34 (17.34%) cases.

Conclusion: Age at diagnosis was significantly lower than the perfect age for operation in most cases and the age at surgery was higher than the perfect age for diagnosis in half of the cases. Therefore, collaboration between general practitioners and pediatric surgeons and pediatricians is necessary for perfect and timely management of UDT.

Keywords: Undescended Testis; Cryptorchidism; Child; Newborn

Introduction

Undescended testis is a frequent anomaly found in male newborns and infants [1, 2]. It is seen in about 30% of premature neonates and almost 1- 4% of term neonates [3]. It is one of the most common urogenital anomalies in male children [4- 6]. Cryptorchidism is also known as undescended testis (UDT), which can be bilateral or unilateral. In addition to the need for surgery to correct UDT, there are some coexisting diseases, like inguinal hernia, that must be addressed at the time of surgical intervention. This surgical correction of inguinal hernia during orchiopexy can save the patients from complicated outcomes [7]. The aim of the present study was to evaluate all UDT cases that were referred to Children's Medical Center during the last 5 years.

Materials and Methods

This study was done in all children who were referred to Children's Medical Center in the last 5 years. All UDT cases that were referred to our hospital during the last 5 years were included in our retrospective study. The data were collected from the patients' records and one medical student entered the data in the questionnaire designed for the study. The age at diagnosis and age at surgery were recorded in our study. Two types of UDT, i.e. bilateral and unilateral UDT, were evaluated in this study. Urogenital anomalies coexisting with UDT such as inguinal hernia (bilateral and unilateral), hydrocele, hypospadias, meatal stenosis, and epididymal anomalies were evaluated, too. The maturity of the patient at the time of birth was also recorded. Finally, the data were analyzed statistically.

Results

Age at diagnosis indicates the patient's age when UDT was detected by parents or the physician. UDT was diagnosed at the time of birth in 122 (62.2%) of 196 cases, until 1 year of age in 153 (78.06%) cases, until 2 years of age in 161 (82.14%) cases, until 6 years of age in 186 (94.89%) cases, and until 11 years of age in 196 (100%) cases.We also evaluated different types of UDT as bilateral and unilateral. Unilateral UDT was detected in 144 (73.46%) cases and bilateral UDT was seen in 52 (26.53%) cases. The incidence of prematurity was investigated in our study. Ten patients (5.10%) were preterm and 186 of 196 patients (94.89%) were term. Urogenital anomalies as coexisting pathology were investigated in our study. Inguinal hernia was seen in 58 (29.59%) UDT cases, 48 (24.48%) had unilateral inguinal hernia and 10 (5.10%) had bilateral inguinal hernia. Hypospadias was detected in 4 (2.04%) UDT cases. Ten UDT

cases (5.10%) had meatal stenosis. Hydrocele was seen in 14 patients (7.14%). Epididymal anomalies were detected in 48 (24.48%) UDT cases. Epididymal anomaly was the most frequent urogenital anomaly detected in all UDT cases. Age range shows the range of age during which a diagnosis of UDT was made by parents or the physicians. A diagnosis of UDT was made at birth in 122 (62.24%) cases, between birth and 1 year of age in 31 (15.81%) cases, between 1 year and 2 years in 8 (4.08%) cases, between 2 and 6 years in 25 (12.75%) cases, and after 6 years of age in 10 (5.10%) cases. The age at surgery was under 1 year in 52 (26.53%) cases, between 1 year and 2 years in 42 (21.24%) cases, between 2 years and 6 years.

Discussion

In our study, 48 (24.48%) patients had unilateral inguinal hernia, 10 (5.10%) had bilateral inguinal hernia, and 14 (7.14%) had hydrocele, which all need surgical correction at the time of UDT surgical management. Moreover, 10 (5.10%) patients had meatal stenosis and 4 (2.04%) patients had hypospadias, which should be surgically corrected either at the time of UDT surgery or later. Moreover, 48 (24.48%) cases had epididymal anomalies that cannot be corrected at the time of UDT surgery; however, this condition should be documented in the patient's record and explained to the parents.

The time of surgery is important in reducing the risk of infertility. Some researchers have recommended age under 18 months as the best time for surgical intervention. The risk of malignancy is not related to the operation time [8]. Some authors believe that people's awareness about this disease can improve the time of diagnosis, referral, and operation [9]. whereas patients with acquired cryptorchidism and retractile testis can be missed in, some investigators recommend serial testicular examination in male children [10]. Age at surgery is so important that some authors recommend age bellow 2 years, even in intra-abdominal UDT, as the best operation time. This recommendation improves the management of these patients [11]. Delayed diagnosis of UDT in children is a common problem in many countries. Therefore, a close relationship between social workers, pediatricians, pediatric surgeons, urologists, and general practitioners is needed for reducing the complications of this major problem [12]. Infertility, testicular torsion, and testicular cancer are some complications of cryptorchidism. Timely surgical intervention may reduce these complications. Therefore, appropriate guidelines seem to be necessary for managing these patients [4]. Complete correction of UDT is so important that re-do orchiopexy is recommended in patients with incomplete correction in the first surgery [13]. In our study, 122 (62.24%) cases were diagnosed at birth, 153 (78.06%) cases were diagnosed under 1 year of age, 161 (82.14%) were diagnosed under 2 years, 186 (94.89%) patients were diagnosed under 6 years, and 196 (100%) cases were diagnosed until 11 years. However, 52 (26.53%) patients underwent surgery under 1 year of age, 42 (21.42%) cases were operated between 1 year and 2 years, 68 (34.69%) were operated between 2 years and 6 years, and 34.

(17.34%) were operated after 6 years. It seems we need more collaboration between pediatricians and general practitioner and surgeons. Moreover, the parents' knowledge should be improved by social workers.

When a diagnosis of cryptorchidism is made, careful examination must be done to distinguish non-palpable bilateral UDT. It may be a presentation of disorders of sexual development (DSD) or congenital adrenal hyperplasia CAH [1]. In our study, 144 (73.46%) patients had unilateral UDT and 52 (26.53%) had bilateral UDT. Patients with DSD or CAH were excluded from this study and these patients had simple bilateral UDT without any other systematic diseases.

Although the management of UDT is controversial, most authors believe that hormone therapy is not a good choice because of the potential risk of destroying spermatogenesis and a low success rate. Surgical intervention is the gold standard for treatment and age 12-18 moths is recommended for surgery [14]. In our center, hormone therapy is outdated and none of cases received hormone therapy.

Some authors recommend surgery for UDT correction under 12 moths. Although age at diagnosis has a decreasing trend, age at surgery is beyond the perfect age [5]. In some centers, UDT surgery is performed later than the recommended because of delayed referral or delayed diagnosis [15]. It seems the timing of UDT surgery and the surgical outcome should be discussed with parents [16]. As seen in our study and many similar studies, delayed diagnosis is a major problem, but the most important problem is delayed referral of the patients.

Conclusions

Although delayed diagnosis is a big problem in patients with UDT, the most important problem is delayed referral of patients. We believe that the parent's knowledge should be improved by social workers, and collaboration between health care teams like surgeons and internists should be enhanced for improving the outcome of this disease.

Conflict of Interest

None declared.

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