

The role of parents in delayed surgery of undescended testis

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Abstract

Aim: Undescended testis (UDT) is the most common congenital urinary system disease. Delayed treatment increases the risk of infertility or malignancy. The aim of this study was to evaluate the effect of educational status and geographical location of the parents (rural vs. urban) on the timing of surgery in patients with UDT.

Material and Methods: The retrospective study included 248 patients that underwent surgery due to UDT between 2014 and 2018. The patients were divided into two groups based on age at surgery: (I) >1 year and (II) ≤1 year. Data regarding the educational status and geographical location of the parents were obtained via telephone interviews.

Results: Of the 248 patients, 67% (n=166) of them were aged over 1 year (Group I) and 33% (n=82) of them were aged below 1 year (Group II). Mean age at surgery was 48.98±29.25 months in Group I and 9.68±1.98 months in Group II. The educational status of the parents was higher in the patients aged below 1 year than in patients aged over 1 year. In addition, the patients living in urban areas admitted to the hospital earlier than those living in rural areas.

Conclusion: Both the parental educational status and the geographical location of the parents had a significant effect on the timing of surgery in UDT patients.

Keywords: Undescended testis; education status; geographical location

INTRODUCTION

Undescended testis (UDT) is the most common congenital urinary system disease affecting male neonates (1,2). The incidence of UDT varies between 2-4% and is higher in preterm neonates (1,3) Testes that are undescended at birth may spontaneously descend into the scrotum within the first six months of age. If not, prompt surgery should be considered after this period and a delay in the treatment may lead to reduced infertility or malignancy in adulthood (1).

In this study, we aimed to evaluate the effect of educational status and geographical location of the parents (rural vs. urban) on the timing of surgery in patients with UDT.

MATERIAL and METHODS

The retrospective study included 248 patients that underwent surgery due to UDT in two different centers

(Department of Pediatric Surgery at the University of Van Yuzuncu Yil and Department of Pediatric Surgery at the Bingol Maternity and Children's Hospital) between 2014 and 2018. The patients were divided into two groups based on age at surgery: (I) >1 year and (II) ≤1 year. Age at surgery was expressed as months of age in all groups. In addition to age at surgery, data regarding the educational status and geographical location of the parents were obtained via telephone interviews. Patients who did not leave their telephone numbers to the hospital system and who could not be reached by telephone were not included in the study.

The patients that came from city center accepted as urban, others (town_village) as rural.

The study was conducted in accordance with the 1964 Helsinki Declaration and was approved by the local ethics committee (Approval No. 3; Date, June 16, 2018).

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Statistical Analysis

Data were analyzed using SPSS for Windows version 21.0 (Armonk, NY: IBM Corp.). Continuous variables were expressed as mean, standard deviation, and minimum-maximum values. Categorical variables were expressed as frequencies and percentages. Descriptive statistics were obtained for the determination of mean ages in each group. In both age groups, the effect of educational status and geographical location of the parents on surgery was determined using Chi-Square test. A p value of <0.05 was considered significant.

RESULTS

Of the 248 patients, 67% (n=166) of them were aged over

1 year (Group I) and 33% (n=82) of them were aged below 1 year (Group II). Mean age at surgery was 48.98 ± 29.25 (range, 13-184) months in Group I and 9.68 ± 1.98 (range, 6-12) months in Group II (Table 1). In terms of parental educational status, the rate of high school and university graduates was higher in Group II than in Group I (Table 2). Meaningfully, an inverse relationship was found between age at surgery and parental educational status ($p=0.001$).

An analysis on the geographical locations of the parents indicated that the frequency of early hospital presentation for UDT was lower in the patients living in rural areas compared to those living in urban areas and a significant difference was found (Table 1) ($p=0.038$).

Table 1. Age at surgery and geographical locations

		Group 1 (>1 age)	Group 2 (≤1 age)
Patients numbers (n)		166	82
Mean age (month)		48.98 ± 29.25	9.68 ± 1.98
Geographical locations	Center	92	46
	Town	54	34
	Village	20	2

Table 2. Parental educational status

	Years	Group 1 (>1 age)	Group 2 (≤1 age)
Mother's educational status	Not literate	26	-
	Only literate	16	-
	Primary school	64	8
	Middle school	44	34
	High school	10	22
	University	6	18
Father's educational status	Not literate	-	-
	Only literate	12	-
	Primary school	24	2
	Middle school	72	12
	High school	38	28
	University	20	40

DISCUSSION

Although UDT is known as a common disease associated with malignancy, there are controversial recommendations on the ideal timing of surgery. For instance, the ideal timing has been proposed as after 6 months of age by The

American Urological Association (1), between 6-12 months of age in Germany (4), before the age of 12 months in the European Association of Urology Guidelines of Pediatric Urology (5), and between 6-18 months of age in another study (6). Taken together, all these views emphasize the

importance of prompt surgical intervention.

The recommended age for surgery has been consistently lowered since the identification of degenerative changes in the testis on electron microscopy, the changes which have been shown to occur after 6 months of age (4,6). However, although these changes lead to increased risk of malignancy and infertility, this risk can be reduced by prompt surgical intervention (1,2,6-8). In our study, however, although 6 months of age was accepted as the threshold age for surgery, only 33% of our patients underwent surgery before the age of 1 year, which implicates that the public should be made aware of UDT.

Common causes of delayed surgery for UDT include low socioeconomic status of the family, delayed hospital presentation and the lack of knowledge of the family physicians about UDT (6). However, literature reviews indicate that there is no enough comprehensive study reporting on the effect of parental education on the timing of surgery in UDT patients. In our study, we found an inverse relationship between parental educational status on the timing of surgery, which could be considered as a valuable contribution of the study to the literature.

Literature also indicates that geographical factors affect the timing of surgery in UDT patients (9). In the present study, the geographical location of the parents had a significant effect on the timing of surgery. Nevertheless, given that the mean age at surgery was remarkably high in our patients, we consider that all male children, regardless of whether they live in rural or urban areas, should be screened for UDT by the primary care physicians in our region.

Limitations

We have limitations in this study. Both of the centers in this study are on the same area of Turkey. So may be the reasons for coming late for operation can be similar. Comparing different areas and different centers could be more important. However, this study is the first about this topic in the east of Turkey.

CONCLUSION

In conclusion, the lack of knowledge of family physicians about UDT, as shown in the literature, and the inadequate knowledge of parents were found to have a key role in

delay treatment of UDT. Accordingly, this delay could be prevented by making not only family physicians but also the community aware of UDT and by screening all young males for UDT.

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