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Özgün araştırma / Original research

Van İlinin Sosyo-Ekonomik Gelişmişlik Düzeyi ile Merkezimizde Yapılan Orşiopeksi Ameliyatı Yaşı Arasındaki İlişkinin Araştırılması

Evaluating The Relationship Between Age at Orchiopexy Performed at Our Center and Socio-Economic Development Level of Van Province

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Özet

Amaç: Testiküler fonksiyonları korumak için, inmemiş testis cerrahisi yaşamın 6 ile 18 ayı arasında önerilmektedir. Fakat, birçok hasta önerilenden daha geç yaşlarda ameliyat geçirmektedirler.

Bu çalışmamızda, Van ilinin sosyo-ekonomik gelişmişlik düzeyinin, hastanemizde yapılan orşiopeksi ameliyatındaki yaş üzerindeki etkisini araştırmayı hedefledik.

Gereç ve Yöntemler: Bu kesitsel çalışmamızda, Van Eğitim ve Araştırma Hastanesinde Ocak 2014- Temmuz 2018 tarihleri arasında orşiopeksi cerrahisi yapılan hastaların medikal kayıtları tarandı. Hastalar ameliyat olduğu yaşa göre 2 gruba ayrıldı. 18 ay ve sonrası yapılan ameliyatlar 'geç' orşiopeksi olarak tanımlandı. Orşiopeksi ortalama yaşı değerlendirilip, sonuçlar benzer diğer çalışmalarla kıyaslanarak tartışıldı.

Bulgular: Çalışmaya dahil edilen 353 hastanın ortalama yaşı 4.9 ± 3.5 yıl ve bunların 242(%68,5)'si geç orşiopeksiydi. Kalkınma Bakanlığı'nın 2011 yılında yayınladığı ''İllerin ve Bölgelerin Ekonomik Gelişmişlik Sıralaması Araştırması''na göre Van ili, az gelişmiş iller grubunda olup 81 ilde 75. sıradadır.

Sonuç: Çalışmamıza dahil edilen hastaların çoğu önerilenden daha geç yaşta orşiopeksi cerrahisi geçirmiş olmalarına rağmen, bulgularımız diğer yurtiçi ve yurtdışı çalışmalarla benzerdir. Şehrin sosyo-ekonomik gelişmişlik düzeyi önemli bir sebep olsa da, geç cerrahiye neden olan başka faktörler de vardır. Ebeveynlerin eğitim seviyelerinin artırılması ve birinci basamak sağlık hizmeti sağlayıcıları tarafından düzenli ev ziyaretleri, er-

Abstract

Objective: To preserve testicular functions, surgery for undescended testis is recommended between 6 and 18 months of age. However, many patients undergo orchiopexy later than recommended ages. In this paper we aimed to assess influence of socio-economic development level of Van province on age at orchiopexy performed at our center.

Material and Methods: The medical records of the patients who underwent orchiopexy at Van Education and Research Hospital between January 2014 and July 2018 were reviewed in this cross-sectional study. Patients were divided into two groups based on age at operation. The surgery which was performed at 18 months of age and later has been defined as "late" orchiopexy. Mean age at orchiopexy was investigated and results were discussed by comparing with other similar studies.

Results: The mean age of 353 patients enrolled in this study was 4.9 ± 3.5 years and of them, 242 (68.5%) had late orchiopexy. According to the ''Research of socio-economic development of the provinces and regions" report published by Ministry of Development in 2011, Van province was in the underdeveloped provinces group and ranked as 75th of 81.

Conclusion: Although most of boys included in the study underwent orchiopexy at a later age than suggested, our results were similar with other national and international studies. Socio-economic development level of city is an important reason but there are some other factors causing the late surgery. We think that increasing the parents' education level and regular home visits by primary

ken orşiopekside etkili olacağını düşünmekteyiz.

Anahtar Kelimeler: İnmemiş testis, orşiopeksi, sosyo-ekonomik durum, yaş

care providers will be effective on early orchiopexy.

Keywords: age, orchiopexy, socioeconomic status, undescended testis

INTRODUCTION

Undescended testis (UDT), commonly seen congenital anomaly of the urogenital system, is affecting 1.0-4.6% of full-term and 1.1-45% of preterm neonates. Although spontaneous descent of UDT to normal scrotal position can be achieved in most cases by the first month of age, failure of testis descent is found in approximately 1.0% of all full-term males. Current guidelines recommend that orchiopexy should be performed before the age of twelve months, and by eighteen months at the latest. This recommendation is based on a fact that the non-scrotal position of the testis results in impaired spermatogenesis and testicular cancer (1).

Despite the guideline suggestions, a recent systematic review demonstrated that most of the patients underwent orchiopexy later than the suggested age. Moreover, the rate of UDT operations performed at the right time was used as one of the quality indicators of the health services of that country (2,3). The level of socio-economic development (SEDE) is one of those indicators. SEDE is a multidimensional phenomenon which depends on many factors such as development, economic growth, income distribution, education level, health services, nutrition level, communication and woman's status (4). In this study, we hypothesize that the age at orchiopexy may be related to socio-economic development level of that city. We, therefore, aimed to evaluate the relationship between these phenomenons in our city and to discuss it in the light of current literature.

MATERIAL AND METHODS

We conducted a cross-sectional study including the patients who underwent orchiopexy at Van Education and Research Hospital between January 2014 and July 2018 and were under 18 years of age. International Classification of Diseases, Tenth Revision (ICD-10) codes (Q53.1, Q53.2 and Q53.9) were used to diagnose UDT cases. Patient age at primary orchiopexy for UDT was selected for evaluation. Two groups were formed based on age at performed surgery. Patients operated before the 18 months of age were formed group I while patients aged 18 months or older were appointed to group II. The relationship between the age at surgery for UDT and the socio-economic development level of Van province was investigated. For this purpose, data published by Ministry of Development in 2011 were taken into account (5). Then, our findings were discussed by comparing with the results of similar studies conducted in our country and other countries.

Approval of Institutional Review Board was obtained before the analysis (No: 2018-8). Microsoft Excel for Macintosh (2016, USA) was used for data collection, analysis and graphics.

RESULTS

Mean age of 353 patients evaluated in this study was 4.9 ± 3.5 years. Of the patients, 111 (31.5%) were in group I and 242 (68.5%) were in group II. While the mean age of the group I was 15.8 ± 7.7 months (range 6-18 months) that was 74.4 ± 46.8 months in group II, equaled 6.2 ± 3.9 years (range 1.5-14 years). We demostrate average age at operation and the number of operated patients according to the evaluated years in Figure 1 and 2. Baseline characteristics as well as applied operation type and the side of UDT are presented in Table 1.

Table 1. Baseline characteristics of the study groups.

	Group I (n=111)	Group II (n=242)
Mean age at operation (mo)	15.8± 7.7	74.4 ± 46.8
Side (n)		
Right	50	125
Left	54	109
Bilateral	7	8
Performed surgery (n)		
Open Orchiopexy	109	225
Laparoscopic orchiopexy	2	11
Orchiectomy	0	6

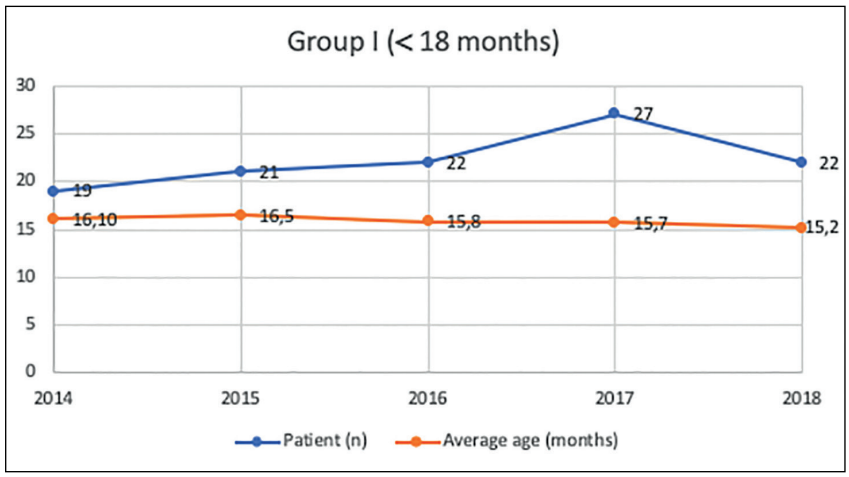

Figure 1. Distribution of Group I patients by age over the years.

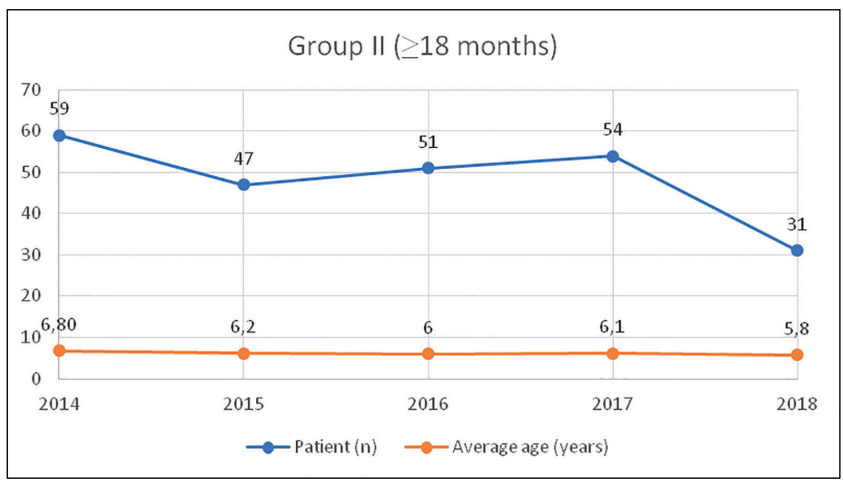

Figure 2. Baseline characteristics of the study groups.

DISCUSSION

UDT is proven to be associated with impaired spermatogenesis and testicular cancer. Current guidelines recommend early surgery to prevent those harmful effects. Therefore, the age at orchiopexy has utmost importance (6). In the recent reports, the ideal age at surgery has been accepted as 6-12 months and it has been stated that surgery should be done up to 18 months at latest. Nevertheless, many children still can not be operated at ideal ages and are confronted with complications of UDT. Economic growth is not directly related to improved population health, additional parameters generated through the economic growth are also required (7).

In a study, Yildiz et al. investigated relationship between the age of boys at the time of surgery and SEDEs of cities which were in 6 different regions of Turkey. The mean age of boys was 4.7 ± 3.6 years (range, 6-191 months). According to this study, the mean ages (as year) at operation were 4.1 ± 3.2 in Antalya (rank 5th of 81), 5.2 ± 4.1 in Sakarya (18th of 81), 3.8 ± 3.2 in Malatya (42nd of 81), 4.7 ± 3.6 in Sivas (49th of 81), 4.0 ± 3.1 in Çorum (50th of 81) and 5.7 ± 4.2 in Mardin (74th of 81). Although there was no statistically significant difference in terms of the mean age at operation between those cities, Mardin province had the highest mean age and the lowest SEDE (8). Moreover, Guven et al. showed median age at the operation in older boys with UDT was 7.2 years (range, 4.0-16.2 years)

in a study conducted in Ankara where is the capital city of Turkey and is one of the most developed cities in the SEDE reports (rank 2nd of 81). However, there was a lack of data about the patients aged younger than 4 years and the age used for late orchiopexy was inappropriate (9). In another study including the patients with UDT from two different cities of Turkey, Denizli and Ordu, the mean age of the patients who underwent orchiopexy after 2 years old was 6.34 ± 0.45 years (range, 3-13 years) and they accounted for 61.5% of all patients. Nevertheless, authors did not present the differences between two cities (10). In our study, 68.5% of the patients with UDT underwent late orchiopexy according to our definition. Mean age at operation in our study is earlier than some other cities such as Mardin and Sakarya. Overall, our results are consistent with other findings in Turkey. Given that Van province is in underdeveloped provinces group and has the lowest SEDE among the aforementioned 10 cities we think that mean age at operation in Van city is relatively better than that in many cities. Since we have not all data of the other studies, we could not analyze and compare the findings statistically with our study.

This situation is actually similar in worldwide. In a study conducted in Al Khobar, Saudi Arabia, Alsowayan et al. demonstrated that median age at time of orchiopexy was 25 (range, 7.65-130.2) months (11). Furthermore, the median age at orchiopexy was found as 50.5 months (range 22 – 117) in a study from Bosnia and Herzegovina (12). Moreover, a multicenter analysis from Germany emerged that the mean age at orchiopexy was later than recommended ages, ranging from 42 to 67 months (13). Similarly, a study performed in Ontario, Canada showed that the median age at surgery for UDT was 23 months, (range, 16-34 months) which also did not meet guideline suggestions (14). In addition, a recent study from United States indicated that 64% of patients underwent orchiopexy later than 24 months of age and concluded approximately 70% of patients with UDT are undergoing orchiopexy at least 6 months later than the suggested age in the United States (15). In contrast to these findings, three studies in the literature showed better results than average. Firstly, a multicenter analysis from Italy showed that overally 70% of boys with UDT underwent orchiopexy at a mean age of 22.8 months (range, 1.2 - 56.4). Of those 13% were operated before 12 months of age (16). However, in this study questionnaires were only completed by pediatricians in private practice, which may influence study results and cause bias. Second study conducted by Yiee et al. demonstrated that 1192 of 1365 patients with UDT (87%) underwent orchiopexy under the age of 18 months (2). However, premature babies, patients with low birth weight and patients who underwent orchiopexy were excluded in that study. Lastly, an Australian study demonstrated that 78% of the boys who underwent orchiopexy were under 36 months of age, whilst 22% of them over 36 months. The median age at primary surgery was determined as 16.6 months (17). This trial is a large population-based cohort study with good results about age at orchiopexy; however nearly 70% of orchiopexy surgeries were performed over one year of age.

Although Turkey has an upper middle income level according to 'Atlas of Sustainable Development Goals from World Development Indicators' published by World Bank in 2018, universal health coverage index of Turkey is among high income countries including United States, Italy, Germany, France, Canada and Russia. Based on that fact, we can explain the reason why age at orchiopexy in Turkey is not worse than other countries in the world (18). Access to the health centers and the cost of recovery are the most important factors in the health coverage. In Turkey, patients can reach to physicians very easily and there are developed hospitals even in undeveloped cities.

However, most boys undergo orchiopexy at a later age than recommended in Turkey. One of the explanation of this situation may be related to late reference of patients with UDT by pediatricians or family practitioners. Secondly, a detailed physical examination including evaluation of testes is not being performed in every child visit. Thirdly, surgeons may not update their knowledge and follow-up current guidelines. Patient related factors in Turkey can be listed as follows; low economic level, living in rural areas and unawareness of parents.

There are some inherit limitations of this study. Firstlywe covered only one province and can not generalize theseresults. However,there are similarstudies conducted

in different cities of Turkey and we had a chance to comment the results of them. In addition, our paper is the first study in Turkey to establish 18 months-age as forming the groups. Other studies generally took this threshold as 24 months. Secondly, we did not know the level of education of the parents and the person who referred those patients to our clinics. This study is also limited by its relatively small number of patients.

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