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Üroloji Polikliniğine Başvuran Prepubertal Erkek Çocuklarında Mikropenis Prevalansı ve Başvuru Sebepleri

Micropenis Prevalence and Causes for Urology Polyclinic Referral in Prepubertal Boys

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ÖZ

GİRİŞ ve AMAÇ: Bu çalışmada bir yıl içerisinde herhangi bir sebeple üroloji polikliniğine başvuran prepubertal erkek çocuk hastalarda mikropenis prevelansının belirlenmesi ve hastaların başvuru sebeplerinin ortaya çıkartılması planlandı.

YÖNTEM ve GEREÇLER: Aralık 2014-Aralık 2015 tarihleri arasında üroloji polikliniğine başvuran prepubertal erkek çocuk (<12 yaş) hastalar değerlendirmeye alındı. Cetvel yardımıyla penis gerilerek glansın ucundan simfisis pubisteki penis köküne kadar penis dorsumu boyunca uzunluk ölçümü yapıldı. Penis boyu doğru bir şekilde ölçüldükten sonra, bulunan değer kronolojik yaş için normal değerlerle karşılaştırıldı ve -2,5 SD altındaki değerler (Konvansiyonel ölçüm) mikropenis olarak kabul edildi. Prepubertal Türk çocuklarında penis ölçümü (TÇPÖ) çalışmasına göre penis boyu -2,5 SD altındaki değerler saptanan çocuklar da mikropenis açısından incelendi.

BULGULAR: Bir yıl süre içerisinde üroloji polikliniğine başvuran toplam 227 erkek çocuk hasta değerlendirildi. Konvansiyonel ölçüme göre toplam 6 hastada (%2,6) mikropenis saptandı, bu çocukların 3 tanesinin penis boyu kısalığı, 2'sinin sünnet isteği, 1 tanesinin de retraktil testis nedeniyle başvurduğu saptandı. Prepubertal Türk Çocuklarında Penis Ölçümü (TÇPÖ) çalışmasına göre 13 hastada (%5,7) mikropenis saptandı. Konvansiyonel ölçüme göre mikropenis saptanan 6 hastanın penis boyu değerlerinin TÇPÖ çalışmasına göre mikropenis ile uyumlu olduğu tespit edildi. Diğer 7 hastanın başvuru sebepleri; 3 hastada penis boyu kısalığı, 2 hastada sünnet isteği, 1 hastada retraktil testis, 1 hastada üriner enfeksiyon olarak belirlendi. Penis boyu kısalığı ile başvuran hastaların %78,5'inde (11/14) penis boyunu etkileyebilecek patoloji olduğu saptandı.

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TARTIŞMA ve SONUÇ: Bu çalışmada prepubertal erkek çocuklarında saptanan mikropenis oranı yüksek bulunmuştur. Bu sonuç yenidoğan döneminde yapılmış önceki çalışmalara kıyasla oldukça farklıdır. Bu nedenle olası sebepleri ve tanı sonrası tedavi sürecini içeren geniş serili çalışmaların yapılmasının bu konuda daha faydalı olabileceğini düşünüyoruz.

Anahtar Kelimeler: mikropenis, penis uzunluğu, eksternal genital anomali
Türkçe Kısa Başlık: Prepubertal Erkek Çocuklarında Mikropenis Prevalansı

Micropenis Prevalence and Causes for Urology Polyclinic Referral in Prepubertal Boys

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ABSTRACT

INTRODUCTION: In this study, it was planned to determine the micropenis prevalence in prepubertal boys referred to the urology polyclinic for any reason in a year and their referral causes.

METHODS: Prepubertal boys (<12 years old) referred to the urology polyclinic between December 2014 and December 2015 were included in evaluation. Stretching the penis with a ruler, the length was measured along the penis dorsum between the glans end and root of penis in symphysis pubis. After the penis length was measured correctly, the acquired value was compared with the normal values for chronological age and values below -2.5 SD (Conventional measurement) were accepted as micropenis.

RESULTS: A total of 227 boys referred to the urology polyclinic in a year were evaluated. Micropenis was detected in a total of six patients (2,6%) according to the conventional measurement and it was detected that three of these boys were referred to the hospital due to short penis, two with circumcision demand and one with retractile testicle. A pathology which could affect penis length was detected in 78,5% (11/14) of the patients referred with short penis.

DISCUSSION and CONCLUSION: Micropenis ferquency in prepubertal boys was found high in this study. This result was quite different from previous studies on neonates. Therefore, studies in large groups including possible causes and post-diagnosis treatment phase would be more useful.

Keywords: micropenis, penis length, external genital anomaly
İngilizce Kısa Başlık: Micropenis Prevalence In Prepubertal Boys

Introduction:

Micropenis is penis length below -2.5 standard deviation (SD) for the age (1). Micropenis may not always be due to a cause or it may occur as one of the clinical findings of some syndromes. Micropenis incidence in boys born in United States of America (USA) between 1997 and 2000 was detected as 1.5/10000 (2). The first stage in micropenis diagnosis is genital examination. It is important to measure the penis with the correct technique in these children as the penis is buried in obese boys especially and it saves these patients from wrong diagnosis (3). Wrong diagnosis may worry the parents and cause unnecessary examinations and tests. Correct penis length is acquired by measuring the stretched penile length (4). A detailed evaluation should be done for etiology after measuring the stretched penis length in cases suspected for micropenis. Many causes may play role in micropenis etiology (5).

In this study, we wanted to determine the prevalance of micropenis in prepubertal boys referring to the urology polyclinic for any reason in a year and the referral causes for the patients.

Materials and Methods:

Prepubertal boys (<12 years) referred to the urology polyclinic (one center) between December 2014 and December 2015 were included in evaluation. Permission was taken from the families of the children. Stretching the penis with a ruler, the length was measured along the penis dorsum between the glans end and root of penis in symphysis pubis. During the measurement, the suprapubic fat tissue was pressed tightly so that the measurement wouldn't be affected and the prepuce was not included in the measurement. After the penis length was measured correctly, the acquired value was compared with the normal values for chronological age and values below -2.5 SD (Conventional measurement) were accepted as micropenis (6).

Boys with penis length below -2.5 SD according to the "penis measurement in prepubertal Turkish boys" (PMTB) study (7) were examined for micropenis. Among the conditions which may be mistaken for micropenis, buried, trapped and webbed penis conditions were evaluated separately. Follicle stimulating hormone (FSH), luteinizing hormone (LH) and total testosterone levels were measured in micropenis patients. This article is in accordance with ethical standards and have been approved by local authorities. Written informed consent was obtained from patients' parents, who participated in this study

Results

A total of 227 boys referred to the urology polyclinic in a year were evaluated. 92 patients referred with circumcision demand, 44 with phimosis, 14 with retractile testicle, 18 with enuresis, 14 with short penis, 12 with urinary infection, 9 with renal colic, 6 with undescended testicle, 6 with orchitis, 4 with hydrocele, 2 with urethral stone, 2 with varicocele, and 2 with polycystic kidney. Referral causes of the patients to the urology clinic can be seen in Table 1.

Table 1: Referral causes to the urology polyclinic (one center)

Referral Cause	**Number (%)**
Circumcision Demand	92 (40.5)
Phimosis	44 (19.3)
Enuresis	18 (7.9)
Short Penis	14 (6.1)
Retractile testicle	14 (6.1)
Urinary infection	12 (5.2)
Renal Colic	9 (3.9)
Undescended Testicle	6 (2.64)
Orchitis	6 (2.64)
Hydrocele	4 (1.7)
Urethral stone	2 (0.88)
Varicocele	2 (0.88)
Hypospadias	2 (0.88)
Polycystic kidney	2 (0.88)
	Total:227

Micropenis was detected in a total of six patients (2.6%) according to the conventional measurement and it was detected that three of these boys were referred to the hospital due to short penis, two with circumcision demand and one with retractile testicle. Micropenis was detected in 13 patients (5.7%) according to Penis Measurement in Prepubertal Turkish Boys study (7). It was detected that the penis length values of six micropenis patients based on the referral causes of the other seven patients were short penis in three patient, circumcision demand in two patients, retractile testicle in one patient and urinary infection in one patient.

Details of patients who have micropenis according to both measurements can be seen in Table 2.

Table 2: Details of the patients who have micropenis

Patient No	Age (years)	Penis Length (cm)	Referral Cause	FSH (mIU/ml)	LH (mIU/ml)	Testosterone (ng/ml)	Study Used in Measurement Evaluation
1.	11	3.6	Short penis	0.42	1.21	0.02	Conventional+ PMTB
2.	9	3.76	Circumcision demand	**0.18**	**0.1**	0.024	Conventional+ PMTB
3.	7	3.4	Short penis	0.36	0.62	0.023	Conventional+ PMTB
4.	7	2	Short penis	**0.1**	**0.1**	0.02	Conventional+ PMTB
5.	7	3.1	Circumcision demand	**0.12**	**0.14**	0.023	Conventional+ PMTB
6.	10	3.5	Retractile testicle	0.497	1.99	0.025	Conventional+ PMTB
7.	11	3.92	Short penis	0.384	0.2	0.16	PMTB
8.	9	4.36	Urinary infection	0.434	0.2	0.02	PMTB
9.	9	4.27	Short penis	0.52	0.21	0.02	PMTB
10.	8	4.2	Retractile testicle	1.17	0.24	0.02	PMTB
11.	7	4.48	Circumcision demand	1.1	0.2	0.02	PMTB
12.	8	4	Short penis	1.16	0.2	0.02	PMTB
13.	8	4.57	Circumcision demand	0.68	0.18	0.025	PMTB

Abbreviations: PMTB:Penis Measurement in Prepubertal Turkish Boys, **cm**:centimeter, **ml:**milliliter, **ng:**nanogram, **mIU**:milliunit.

In three patients (According to conventional measurement: 50%, according to PMTB: 23%) it was observed that FSH and LH levels were below reference values. Possible pathologies which could cause hypogonadism were suspected in these patients. All micropenis patients were transferred to pediatric endocrinology for chromosome analysis, etiological research and detailed examination. Also among the patients who were referred with short penis, buried penis was detected in four patients and webbed penis was detected in one patient. Among the 14 patients referred with short penis, micropenis was detected in six patients (42.8%) (according to PMTB study), buried penis in four patients (28.5%), webbed penis in one patient (7%) and normal penis length in three patients (21.4%). A pathology which could affect penis length was detected in 78.5% (11/14) of the patients referred with short penis.

Discussion

Proofs for an increasing tendency in male external genital malformations have been reported in many countries in recent years (8). Major chromosomal anomalies, hypothalamo-hypophyseal problems, gonadal defects and idiopathic causes play role in micropenis etiology (5). In this study, the aim was to investigate the prevalence of micropenis, not its etiology. So no detailed research was made for etiology. Nevertheless, hormonal disorder was detected in 3 out of 6 patients with micropenis according to the conventional measurement (50%). In the other three patients whose possible pathologies may cause hypogonadism in micropenis etiology, it was considered that the most probable cause may be idiopathic. All micropenis patients were transferred to pediatric endocrinology for a detailed research.

In the study by Gaspari et al, it was detected that 56 out of 2710 male neonates (2.07%) had external genital organ anomaly and the anomaly was micropenis in 18 of these patients (0.66%) (8).

Nelson et al detected micropenis in 0.015% of 1,608,317 male neonates born between 1997 and 2000. In this study, it was observed that micropenis presence was the fifth most common penile anomaly with a prevalence of 1.8% (2).

Mazen et al reported the micropenis incidence as 0.03% (9). Gaspari et al reported micropenis in 0.35% of 1442 male newborns in the study they made in France (10). In many studies, it was observed that micropenis prevalance differed significantly. It was also detected that previous studies examined only the neonatal population. Micropenis prevalance was determined as 2.6% in our study. It was found rather interesting that this value was high compared to previous studies. But we think that one of the reasons for this high value is the fact that 6.1% of the patients were referred with short penis complaint. Also different from other studies, our patient profile consisted of a wide age (0-12 age) range. Previous studies showed that normal penis length was different in different nations (7,11). Therefore, in our study, we made a separate evaluation based on the values determined by Cihaz et al. in the study (7) for penis length measurement in prepubertal Turkish boys. Quite interestingly, it was detected that micropenis prevalance (5.7%) was nearly two times higher when compared to the conventional measurement (2.6%).

When the values for both measurements were examined, a difference of 0.42-1.44 cm was detected between -2.5 SD values in the conventional and PMTB study (4). High values in PMTB study explain this difference.

One of the interesting results of this study was finding pathologies which may affect penis length in 78.5% of the boys who were referred with short penis complaint. 42.8% micropenis (according to PMTB study), 28.5% burried penis and 7% webbed penis were detected in these children. Although penis length was found low by the family, it was detected that the penis length of 21.4% of the patients was normal. These results reveal the importance of the observations of families on penis length.

It is considered that the recent increase in external genital anomaly ratio including micropenis is due to exposure to industrial products, drugs, food and pesticides with estrogenic and antiandrogenic effects directly, through water or professionally. It is especially interesting that vegetarian diet is blamed for suspected causes. It is supposed that vegetarian diet contains natural phyto estrogens and thus anomalies increase (2,7,8,9). We believe etiological and genetic researches with elder age groups in larger cohorts including post-treatment phases are necessary.

Conclusion

In this study, micropenis prevalance (2.6%) detected in prepubertal boys referred to the urology polyclinic in a year for any reason was found high. This value was higher than previous studies on neonates. Therefore, we think that studies with large patient series including possible causes and post-diagnosis treatment phase would be more useful.

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