Turgut Özal Tıp Merkezi Dergisi **6(1):1999**

CONGENITAL INGUINAL PATHOLOGIES IN MALATYA SCHOOL AGE CHILDREN

Dr. Uğur KOLTUKSUZ *
Dr. Murat MUTUŞ *
Dr. Cengiz YAKINCI **
Dr. Sema UĞURALP *
Dr. Mustafa AYDİNÇ *
Dr. Selma ÇETİN *
Dr. Harun GÜRSOY *

Inguinal pathologies are the most common surgical diseases performed by pediatric surgeons. In this study, we aimed to detect the incidence and the ratio of operated cases among school children in Malatya by using a simple, but informative screening method. Primary schools in different regions of the city have been visited, and queries containing a guideline for diagnosis and brief information about inguinal pathologies were distributed to a total of 9078 students in order to reach the parents. In the second visit, queries were collected and 1086 students, which were reported by families to have pathology were examined. 191 (2.1%) student had inguinal hernia, and 15 (0.31%) of boys had undescended testis, and only 61 (32%), and 7 (47%) of them had operation, respectively.

In conclusion, although the most common reasons of surgical interventions performed by pediatric surgeons are inguinal pathologies, this study has revealed that even the primary school age children still carry the risks and hazards of the complications for these diseases. It seems that such easily performed and inexpensive mass screenings done especially in schools may help to reach the undetected cases, and interact with the families to solve their children's problem and prevent the development of complications.

***Key words**: Inguinal hernia, undescended testis, child*

* İnönü Üniversitesi Tıp Fakültesi, Çocuk Cerrahisi Anabilim Dalı MALATYA
** İnönü Üniversitesi Tıp Fakültesi, Çocuk Sağlığı ve Hastalıkları Anabilim Dalı MALATYA

Malatya ilkokul çocuklarında konjenital inguinal patolojiler

İnguinal bölge patolojileri, çocuk cerrahlarının en sık uğraştığı hastalık grubudur. Bu çalışmada, Malatya ili okul çağı çocuklarında bu patolojilerin görülme sıklığını ve tedavilerinin ne oranda tamamlandığını basit ama bilgilendirici bir tarama yöntemi kullanarak bulmayı amaçladık. İlin değişik bölgelerine dağılmış 10 ilkokul ziyaret edilerek, toplam 9078 öğrenciye ailelerine verilmek üzere inguinal bölge patolojileri ve tanısı ile ilgili açıklayıcı bilgi içeren formlar dağıtıldı. İkinci ziyarette formlar toplanarak, aileleri tarafından inguinal bölge patolojisi olduğu bildirilen 1086 öğrenci çalışmaya dahil edilerek fizik muayeneleri yapıldı. Bunlardan 191 (%2.1) öğrencide ingunal herni, 15 (%0.31) erkek öğrencide inmemiş testis mevcuttu. İnguinal hernili öğrencilerin sadece 61'i (%32), inmemiş testislilerin ise 7'si (%47) opere olmuştu.

İnguinal bölge patolojilerinin onarımı çocuk cerrahları tarafından en sık yapılan cerrahi girişimler olsa da, çalışmamız, ilkokul çağı çocuklarında yine de büyük oranda tedavinin tamamlanmadığını, ve komplikasyon riskleri taşıdığını göstermektedir. Özellikle okullarda yapılacak bu tür basit ve masrafsız taramaların, henüz tanı konulmamış olgulara ve ailelerine ulaşmayı sağlayarak, tedavilerinin yapılıp komplikasyonların önlenmesinde yardımcı olacağına inanıyoruz.

Yazışma Adresi:
Dr. Uğur Koltuksuz
İnönü Üniversitesi Tıp Fakültesi, Çocuk Cerrahisi Anabilim Dalı 44069
MALATYA

***Anahtar kelimeler**: İnguinal herni, inmemiş testis, çocuk*

Repair of inguinal hernias and hydroceles are the most common surgical interventions in the pediatric age group. The incidence of inguinal hernias due to incomplete or abnormal obliteration of processus vaginalis is 0.8% - 4.4% in children, and may increase up to 16% - 25% in preterms, and approximately six times more common in males than females[1]. Patients most frequently present with an inguinal or scrotal swelling that increases by crying or straining. The mass can easily be palpated by physical examination, and usually can be reduced manually. In some cases, however, it is not always possible to demonstrate the presence of hernia. In such cases, diagnosis primarily depends on the characteristic history obtained from the family. The treatment of indirect inguinal hernia is surgical repair, and is recommended to be done electively in the shortest time period available after diagnosis, for the risk of strangulation or incarceration reported to be 17% in patients under 10 years of age[1].

Undescended testis is a condition, which occurs due to failure of testis to descend into scrotum during fetal life and is not rare in humans. Although a hormonal theory is proposed, the etiology is still unknown. It is recommended that orchiopexy must be performed between 6 - 24 months of age in order to increase the fertility potential and to prevent the development of testicular malignancy as well as psychological problems[1].

In the present study, we aimed to find out the prevalence of inguinal hernias that must be repaired as soon as possible after diagnosis and undescended testis which has to be corrected by the age of two, and to assess the frequency of completion of the treatment in school age children in Malatya. We also aimed to document and demonstrate the effectiveness of mass screenings in these pathologies.

MATERIAL AND METHODS

We screened 9078 students; 4372 female (48.2%) and 4706 male (51.8%), between the ages of 6 and 13 in 10 randomly chosen primary schools located in varying socioeconomic leveled regions of Malatya. Queries containing information about inguinal pathologies were handed out to the students in order to contact the parents. They were asked to focus on their child, and to detect any subjective or objective complaints like pain, swelling, mass. They were also asked to inform their schoolteachers about these detected abnormalities.

There were 1086 students detected by this method, and their physical examinations were made by the same physician in the second visit. Results of the parameters like age, sex, complaints, history, duration of symptoms and signs, physical findings, side of the pathology, previous surgery, and complications in students with any inguinal pathology were collected in standard data forms. The parents of the children, in whom the anomalies were detected, were then contacted in a third visit, or invited to the hospital in a scheduled time.

Descriptive statistics were used to evaluate the data.

RESULTS

Congenital inguinal pathologies were detected in 209 (2.3%) of 9078 students (4372 girls, 4706 boys) aged between 6-13 years (mean: 9.5, SD: 1.6). Inguinal hernia was present in 191 (2.1%) students, and male to female ratio was approximately 2:1, 134 (70%) males and 57 (30%) girls. Sex vs. side of hernia and previous operation history for hernia are depicted in table 1. There were 3 contralateral hernias present that developed after unilateral operation. One child was operated twice for recurrence. There were 53 students with inguinal hernia that neither themselves nor the families aware of the pathology, and had never been examined by a physician.

Undescended testis was present in 15 male students (0.31%). Eight of them were right sided, three left sided and four bilateral. Only seven patients (46%) had an orchiopexy operation (Table 2). Although themselves and the families were aware of the pathology, no attempts for correction were made in the other nonoperated 8 students. Inguinal hernia was concomitantly present in 3 cases.

DISCUSSION

We observed 2.1% of children to have indirect

Table 1. Side vs sex of children with inguinal hernia, and the ratio of operated cases of each group are shown.

Side of Inguinal Hernia	Male		Female		Total	
	Total (%)	Operated(%)	Total (%)	Operated(%)	All (%)	Operated (%)
Right	78 (40.8)	29 (15.2)	31 (16.2)	4 (2.1)	109 (57.1)	33 (17.3)
Left	35 (18.3)	17 (8.9)	13 (6.8)	2 (1.0)	48 (25.1)	19 (9.9)
Bilateral	21 (11.0)	9 (4.7)	13 (6.8)	0 (0.0)	34 (17.8)	9 (4.7)
Total	134 (70.1)	55 (28.8)	57 (29.8)	6 (3.1)	191 (100.0)	61 (31.9)

Table 2. Side of undescended testis and number of operated cases.

Side of Undescended Testis	Undescended Testis		
	Operated	Nonoperated	Total
Right	4	4	8
Left	1	2	3
Bilateral	2	2	4
Total	7	8	15

inguinal hernia and 0.31% of boys to have undescended testis either treated or not. Only 31.9% of children with inguinal hernia and less than 50% of children with undescended testis were operated on. The appearance of hernia may widely differ from patient to patient, and this may cause a delay in diagnosis unless it gets complicated or the family becomes aware. Inguinal hernias are recommended to be repaired as soon as possible after the diagnosis is made in order to minimize the risk of incarceration or strangulation. Strangulated hernias need emergency exploration and treatment in order to prevent the necrosis of sac contents such as bowel, omentum, and ovary. Mortality of strangulated cases is also reported to increase significantly after emergency operations[2]. In addition to elevated mortality, incarcerated hernias may lead to strangulation of testis by increased pressure on spermatic cord leading to testicular atrophy[3-5]. Cryptorchid testes are also indicated to be operated in early childhood in order to reduce the observed risk of diminished fertility, the possible prevention of the observed increased risk of malignancy, correction of associated hernia, reduction of the risk of testis torsion, and alleviation of the psychological stress of an empty scrotum[6].

In our study we found that the rate of operative management in inguinal pathologies was less than expected, mostly probably due to the unawareness or neglect of the families. Personal communication with the families of the non-operated cases showed that most parents were not well informed about the consequences of the pathologic state. The study supplied education to all these families, and more important than that, to the teachers.

Another aspect of this study was the method we used in screening the students. So far as we searched the literature, this was a unique screening method to detect the inguinal pathologies. The incidences found with this method among school children were similar to the literature, showing the effectiveness of the method. The characteristic history and the nature of the pathologic state helped us in easy diagnosis. The queries we prepared not only helped us in collecting data, but also both informed and supplied interaction with the families. After the study, the children were scheduled to have an operation, and most of them had their treatment completed either in our institution, or in other hospitals.

In conclusion, although the most common causes of surgical interventions performed by pediatric surgeons are inguinal pathologies, this study revealed that even the primary school age children still carry the risks and hazards of the complications for inguinal pathologies. it seems that such easily performed and inexpensive mass screenings done especially in schools may help to reach the undetected cases and interact with the families to solve their children's problems and prevent the development of complications.

REFERENCES

1. Lloyd DA, Rintala RJ. Inguinal hernia and hydrocele. In O'Neill JA Jr, Rowe MI, Grosfeld JL, et al (editors), Pediatric Surgery. 5th Ed. St. Louis, MO: Mosby Year-Book 1998: 1071-86.
2. Primatesta P, Goldacre MJ. Inguinal hernia repair: incidence of elective and emergency surgery, readmission and mortality. Int J Epidemiol 1996; 25: 835-9.

3. Kogan S, Hadziselimovic F, Howards SS, et al. Pediatric Andrology. In: Gillenwater JY, Howard SS, Ducket JW et al (Editors). Adult and Pediatric Urology. 3th Ed. St. Louis, MO: Mosby Year-Book 1996: 2623-74.
4. Leung WY, Poon M, Fan TW, et al. Testicular volume of boys after inguinal herniotomy: combined clinical and radiological follow-up. Pediatr Surg Int 1999; 15: 40-1.
5. Walc L, Bass J, Rubin S, Walton M. Testicular fate after incarcerated hernia repair and/or orchiopexy performed in patients under 6 months of age. J Pediatr Surg 1995; 30: 1195-7.
6. Kogan SJ, Gill B. Cryptorchidism. In: King LR (Editor). Urologic Surgery in infants and children. Philadelphia: WB Saunders Company 1998; 224-38.