

## Adölesan varikoselin klinik görünümü ve belirtilerin önemi

*Clinical presentation of adolescent varicocele and importance of symptoms*

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### Özet

**Amaç:** Kliniğimize başvurup adölesan varikosel nedeniyle opere edilen hastaların klinik görünümü ve mevcut şikayetlerin görülme sıklığını değerlendirdik ve hastalık sürecinde bu şikayetlerin önemini belirledik.

**Gereç ve Yöntemler:** 1995 ile 2012 yılları arasında varikosel nedeniyle cerrahi tedavi yapılmış olan 18 yaş altındaki hastaların kayıtlarını geriye dönük inceledik.

**Bulgular:** Varikosel hastalığından dolayı 71 hastaya (ortalama yaş 16.4, 11-18 yaş aralığında) cerrahi müdahale yapıldı. Ağrı şikayeti varikosel cerrahisi yapılan hastaların ana geliş nedeniydi, 46 çocukta (%58.2) sadece ağrı, 14 çocukta (%17.7) sadece kozmetik, 7 çocukta sadece şişlik, 7 çocukta ağrı ve kozmetik, 5 çocukta ağrı ve şişlik şikayeti vardı. Klinik evre aritmetik ortalaması grup 1'de (sadece ağrı) en düşük iken, grup 3'de (sadece şişlik) en yüksekti. (sırasıyla 2.11 ve 2.71)

**Sonuç:** Ağrı şikayeti adölesan yaş grubunda varikosel nedeniyle cerrahi yapılanlarda ana sebebi. Kozmetik ve şişlik şikayetleri olan varikosel hastalarında ortalama klinik evre ağrı şikayeti olan hastalara göre daha yüksekti ve bu ağrı şikayetinın hastaların doktora erken gelmesine neden olduğunu gösterir. Belli bir ağrı şikayeti yokken, ebeveynin bilinçli olması teşhisin erken konulmasında önemli bir payı oluşturur. Ebeveynlerin eğitimi ve bilgilendirilmesiyle, daha iyi sonuçlar elde edilebilir.

**Anahtar Kelimeler:** Adölesan Varikosel, Klinik Görünüm, Şikayetler.

### Abstract

**Objectives:** We evaluated the clinical presentation and proportion of presenting symptoms of patients operated due to adolescent varicocele in our clinic, and assessed the importance of the presenting symptoms for progression of the disease.

**Materials and Methods:** Clinical records of patients younger than 18 years old underwent surgical treatment for varicocele between 1995 and 2012 were reviewed retrospectively.

**Results:** Seventy-one patients (mean age 16.4, range 11 to 18) underwent surgery due to varicocele disease. Pain complaint was the most common presenting symptom of the patients underwent varicocele surgery, 46 boys (58.2%) had only pain, 14 boys (17.7%) had only cosmetic complaint, 7 boys (8.8%) had only swelling, 7 boys (8.8%) had pain+cosmetic, 5 boys (6.3%) had pain+swelling symptoms. While the arithmetic mean of clinical grade was lowest in group 1 (pain only), it was highest in group 3 (swelling only) (2.11 vs. 2.71, respectively).

**Conclusion:** The pain symptom was the main reason for the varicocele surgery performed in adolescent age group. Mean clinical grades of varicocele of patients with cosmetic and swelling symptoms were higher than that of the patients with pain symptom and this means that the pain complaint causes the patient coming early to the doctor. While there is no particular pain symptom, parental awareness constitutes an important part of the early diagnosis. With training and informing parents, the better results can be achieved.

**Key Words:** Adolescent Varicocele, Clinical Presentation, Symptoms.

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## Introduction

Varicocele is dilatation of pampiniform venous plexus and can be found in boys as young as 5 years and left testicular growth arrest as early as 9 years (1). Varicocele incidence increases with age up to 13.7% to 16.2% during 10-15 years of age (2), which is similar to the incidence of varicocele in adults. It is mostly asymptomatic in adolescent and can lead to infertility in adults. In children and adolescents, pain, fullness, swelling or droopy appearance of scrotum may be the reasons to bring them to urologist by their parents. Varicocele is a progressive disease and its prevalence and testicular atrophy increases with pubertal stage (3). This venous dilatation was palpable in 35% of men with primary infertility and 81% of men with secondary infertility (4).

Treatment of varicocele is still controversial. Managing conservatively or repairing surgically is the question waiting to be answered. There is debate about effectiveness of surgery. Varicolectomy can improve sperm quality in adults. However, infertility is not the presenting symptom for pediatric and adolescent patients. In these age groups, surgical indications include the presence of a clinically palpable varicocele and testicular asymmetry in the absence of other clinical symptoms, or palpable varicocele with ipsilateral orchialgia without the other identifiable causes (5).

As we mentioned before, varicocele is generally asymptomatic and surgical intervention is mostly performed in case of testicular growth delay and pain. Nowadays relative indications become important so we retrospectively investigated the clinical presentation and proportion of presenting symptoms of patients operated due to varicocele in our clinic, and evaluated the importance of the presenting symptoms for progression of this disease.

## Materials and Methods

Clinical records of 78 patients younger than 18 years old underwent surgical treatment for varicocele between 1995 and 2012 were reviewed retrospectively. The patients whose all clinical records were unavailable or had a previous inguinal/scrotal surgery were not included in this study. Six patients were excluded from the study by this way. The patients' histories and the physical examinations were recorded. Varicocele disease was diagnosed by physical examinations and color duplex scrotal ultra-

sound (CDUS) was used for assessment of objective testicular size discrepancy in all patients and relieving parental anxiety in some cases. Anamnesis was got from both patients and their parents. The patients were examined to evaluate the scrotal contents then varicoceles were classified as follows: grade 1 venous dilatation palpable during the Valsalva maneuver, grade 2 palpable in standing position without Valsalva maneuver, grade 3 visible without palpation. Following the evaluation, the patients who had testicular hypotrophy underwent immediate varicocele repair but most of the other patients were managed conservatively for a while before surgery.

We reviewed our records, including patients' age, presenting symptoms, varicocele clinical grade, uni- or bilateral varicocele occurrence.

## Results

Seventy-one patients (mean age 16.4, range 11 to 18) underwent surgery due to varicocele disease. The disease was unilaterally in 63 and bilaterally in 8 boys. After revision of our records, we decided to form 5 groups according to the presenting symptoms of the patients as shown in Figure 1; group 1: pain complaint only, group 2: cosmetic complaint only, group 3: swelling complaint only, group 4: pain+cosmetic complaints, group 5: pain+swelling complaints. The cosmetic complaints include fullness, droopy and 'bag of worm' appearance of scrotum. The swelling complaint of patients was due to the relative plump appearance of contralateral normal testis when compared to the ipsilateral hypotrophic testis.

Groups	Grade 1	Grade 2	Grade 3	Mean Grade
Group 1 (n:46)	12	17	17	G 2,11
Group 2 (n:14)	-	5	9	G 2,64
Group 3 (n:7)	-	2	5	G 2,71
Group 4 (n:7)	1	3	3	G 2,28
Group 5 (n:5)	-	2	3	G 2,6

**Table1.** Summary of the data of 71 patients (8 bilateral) (presentation symptoms and grade of their varicoceles during presentation); Group 1: pain only, Group 2: cosmetic only, Group 3: swelling only, Group 4: pain+cosmetic, Group 5: pain+swelling, n: number of patients, G: grade of varicocele.

Pain complaint was the most common presenting symptom of the patients underwent varicocele surgery, 46 boys (58.2%) had only pain, 14 boys (17.7%) had only cosmetic complaint, and 7 boys (8.8%) had only swelling complaint. The remaining 12 patients had mix compla-

ints. While pain and cosmetic complaints were together in 7 boys (8.8%), pain and swelling complaints were together in 5 boys (6.3%). Although the arithmetic mean of clinical grade was lowest in group 1 (pain only), it was highest in group 3 (swelling only) (2.11 vs. 2.71, respectively).

### **Discussion**

Main findings in this study are that: the main presenting symptoms of the patients operated due to varicocele in adolescent age; proportion of these presenting symptoms; the importance of these symptoms on progression of the disease.

Varicocele is a progressive disease that begins to be seen from pediatric or adolescent age groups and it is accepted as most common surgically treatable reason for male infertility. There are several studies about that early repair of varicocele could prevent the infertility in whom the disease diagnosed peripubertally (6, 7). In a study, pregnancy ratio obtained after varicocele surgery was reported as 43%. However, the same ratio was 16% for untreated patients mentioned in this study. Improvement in semen analysis was reported as 66% in the same study (8). On the other hand, there are many studies regarding to the needlessness of the surgery for infertility. Nonetheless, varicocele still remains as a most treatable reason for male infertility.

Pain and infertility are the most common presenting symptoms in adults but this is not same in adolescents. Varicocele in adolescents is usually asymptomatic. Therefore, the diagnosis is typically made at a routine physical examination. On occasion, a patient will present for evaluation of a scrotal mass or testicular discomfort, such as heaviness or a dull ache after standing all day (9). However we found that more than half of adolescent patients operated in our clinic came to the hospital due to the pain complaint. The others were brought by their parents due to fear of scrotal appearance of their children.

According to our study, pain symptom seemed to be a good alert for early diagnosis, which is important to treat the disease before progression. Varicocele was previously known to be a harmless disease. Contrarily, many studies have been reported about deleterious effect of varicocele on testis till now. All of these studies suggested that varicocele can cause progressive testicular damage over time

and the earlier the disease begins the greater the damage will be (9). Kass and Belman showed that early correction of varicocele improved the testicular hypotrophy in adolescent with varicocele (10). This study changed approach to varicocele in adolescent. Numerous studies emphasized catch-up growth after varicocele surgery (7, 11, 12). A Japanese study reported that hypotrophy ratio for boys who underwent surgery was decreased from 67% to 24% but same ratio was increased from 50% to 75% for boys who were followed conservatively (13). Untreated varicoceles cause also abnormal spermatogenesis. Correction of Varicocele resulted in an increase in testis volume and sperm concentration in adolescents (12). In our study, we found that pain symptom caused the early application of the patients to the doctor. According to our data, mean grade of varicocele of the patients with pain symptom only was lowest when compared to the other groups, because pain symptom alarm the patients going to doctor.

Absolute surgical indication is that all discrepancies in testicular size greater than 20%. Also, relative indications for surgery include grade II or more venous dilatation, pain, cosmesis, fullness, swelling not relieved by conservative management, parental or patient's anxiety (14, 15, 16). Nowadays, there are some studies, which were related to early surgical treatment for varicocele in adolescents, emphasized that the effect of varicocele is exaggerated during the specific period of pubertal development for clinically significant testicular growth delay. With a longer follow-up period, that was showed as grade 1 varicocele caused testicular growth delay, if it was left untreated. This is likely due to occurrence of early pathophysiologic changes associated with the varicocele during childhood (17). In current study, mean grades of varicocele of the patients with cosmetic and swelling complaints were 2.64 and 2.71 respectively. Testicular atrophy was seen in 15.1% of the patients who were operated due to varicocele in adolescent age and this showed us that 15.1% of the patients were diagnosed late.

Under these circumstances, early diagnosis of varicocele in pediatric and adolescent age groups gets importance. According to the current approaches, surgical management will probably be the primary choice even for grade 1 varicocele in adolescent. Therefore, relative indications for varicocele surgery will get value. When we inves-

tigated the literatures to determine the ratio of symptoms as the reasons for surgery performed in adolescent, we found that most of the studies were related to the testis hypotrophy and pain. Other causes called as relative indications for surgery were mentioned superficially by authors. In this manner, the proportion of the presenting symptoms for varicocele in adolescent age and their relations with grade of varicocele were clearly shown in our study for the first time.

In conclusion, pain complaint was main reason for varicocele surgery performed in adolescent age group. While cosmetic reasons were the second most commonly seen clinical symptoms but testicular growth delay only was not seen too much as a presenting symptom when compared with the others. Mean clinical grades of varicocele of the patients with cosmetic and swelling symptoms were higher than that of the patients with pain symptom and this means that pain complaint causes the patient coming early to doctor. The patients with cosmetic and swelling symptoms were 26.5% of all patients brought to our clinic and operated due to varicocele and they were diagnosed late when compared to pain group. As we know the deleterious effect of varicocele, which has been emphasized even in grade 1 varicocele by authors, the early diagnosis especially before occurrence of testis atrophy becomes more significant. If the patient and especially their parent are not awake about this disease, the time will be lost. While there is no particular pain symptom, parental awareness constitutes an important part of the early diagnosis. With training and informing parents, the better results can be achieved.

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