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*Olgu / Case*

# Testiküler Damarlar Arası Arteriyovenöz Anastomoz; Olgu Sunumu

## Arterio-Venous Anastomosis Between Testicular Vessels; A Case Report

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**Özet**

Varikosel, pampiniform pleksus ve internal spermatik damarların dilatasyonu olarak tanımlanır ve hafif veya orta düzeyde testiküler ağrıya yol açabilir. Erkek üremesi üzerine sayısız zararlı etkilere neden olabilir. Varikosel tanısını koymak ve tedavi sonrası takip etmek için skrotal renkli doopler ultrasonografi kullanılmaktadır. Testiküler arterlerin varyasyonları yaygındır. Testiküler venlerin anatomik varyasyonları esas olarak embriyolojik kökenlerine atfedilir. Çeşitli varyasyonlar daha önce kadavra dokusu üzerinde tanımlanmıştır. Fakat canlı dokuda daha önce arteryel - venöz anastomoz tespit edilmemiştir. Varikosel cerrahisi sırasında sol testiküler damarlar arasında arteriyo - venöz anastomoz tanısı saptanan bir olguyu sunmayı amaçladık.

19 yaşında erkek hasta sol testiküler ağrı ve skrotal şişlik ile üroloji bölümüne başvurdu. Fizik muayene ile sol varikosel teşhis kondu ve renkli doppler ultrasonografi ile doğrulandı. Daha sonra sol varikoselektomi planlandı. Cerrahi tedavide sol testiküler damarlar arasında arteriyo-venöz anastomozu tespit edildi ve tedavi seçenekleri gözden geçirildi.

Bu yazıda, varikoselektomi sırasında tanısı konan testiküler damarların arteriyo-venöz anastomoz olgusunun ilk örneğini sunmaktayız. Daha önce kadavra üzerinde gösterilmesine rağmen, teşhis ve tedavi konusunda net bir görüş yoktur. Bu tür damar varyasyonlarının, uygun vakalarda takip protokolüne alınabileceğine inanıyoruz. Elbette bu konuda açık bir protokol oluşturmak zordur.

**Anahtar Kelimeler:** Varikosel, arteriyovenöz, anostomoz

**Abstract**

Varicocele is defined as dilatation of the pampiniform plexus and the internal spermatic veins which may lead to mild or moderate testicular pain. It can result in a myriad of deleterious effects on male reproduction. To diagnose and post-treatment follow-up of varicocele scrotal ultrasonography can be performed. The variations of the testicular arteries are common, but venous malformations are not. The anatomical variations of the testicular veins are attributed mainly to their embryologic origin. Several variations have previously been described on cadaver tissue. But arterio-venous anastomosis has never been identified in living tissue. We aim to report a case diagnosed with arterio-venous anastomosis between left testicular vessels during varicocelectomy.

A 19-year-old man applied to the urology department with left testicular pain and scrotal swelling. Left varicocele was diagnosed by using physical examination and confirmed with color doppler ultrasonography of scrotum. Then left varicocelectomy was planned. In surgical treatment, An arterio-venous anastomosis between left testicular vessels was found and treatment options were reviewed.

In this paper, to the best of our knowledge we present the first case of arterio-venous anastomosis between testicular vessels diagnosed during varicocelectomy. Although it was previously shown on the cadaver, there was no clear opinion about diagnosis and treatment. We believe that follow-up of this variation of vessels will be considered at suitable cases. Of course it is difficult to form a clear protocol on this issue.

**Keywords:** Varicocele, arteriovenous, anastomosis

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## INTRODUCTION

Varicocele is abnormal dilatation of the veins of the spermatic cord and a common pathology with the incidence of 15% among men (1). Abnormalities of testicular vessels have been shown twice on the cadaver in the literature (2,3) Arterio-venous anastomosis in testicular veins; to the best of our knowledge, this is the first case that found during the live surgery in the literature up to now.

## CASE REPORT

A 19-year-old man applied to urology department with left testiscular pain and scrotal swelling that continued past several years. Grade 3 left varicocele was found in phsycal examination, Then color doppler ultrasonography (US) of scrotum was performed to confirm the diagnosis. Left pampiniform plexus was dilated and mean size of veins were 3.5mm. Additionally reflux was detected in US (Figure 1). Although total semen volume, sperm count and morphology were found as normal, the sperm motility was found decreased progressively in several spermiograms. Arterio-venous anastomosis was seen after internal spermatic fascias were opened (Figure 2). It was seen that there was a pulsation at the anastomotic area. After partial dissection of vessels from the surrounding tissues we decided that was not appropriate for surgical treatment. Other dilated internal spermatic veins were ligated in operation. In the first month of postoperative period, the complaints of patient was regressed. So, the follow-up protocol was applied to the patient. Six months later, control color doppler ultrasonography (US) of scrotum was performed to confirm the treatment and not detected blood flow in venous vessel (Figure 3) and sperm motility was normal.

## DISCUSSION

The testicular blood vessels originate from abdominal level and course down through the inguinal canal as part of the spermatic cord on their way to the testis. Varicocele is an abnormal enlargement of the pampiniform plexus in scrotum. Invasive treatment options are limited to either percutaneous venous embolization or surgical correction, the latter has several approaches. Variation in testicular artery and vein is not uncommon. They can

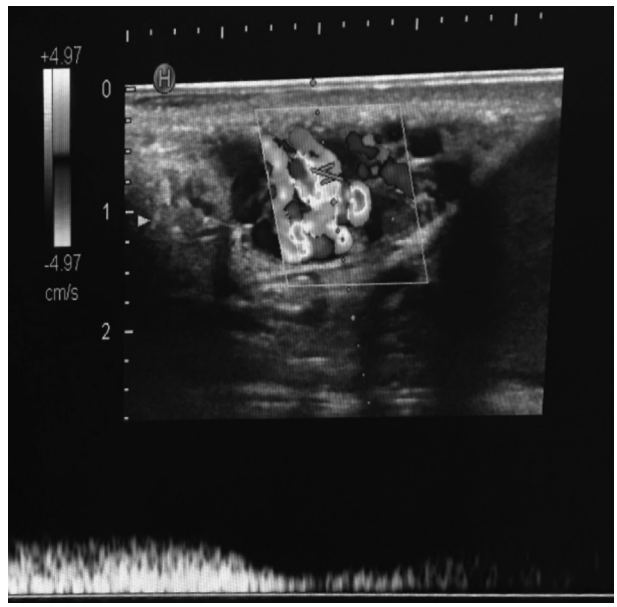


**Figure 1**: Dilated and refluxsive left pampiniform plexus in ultrasonography.

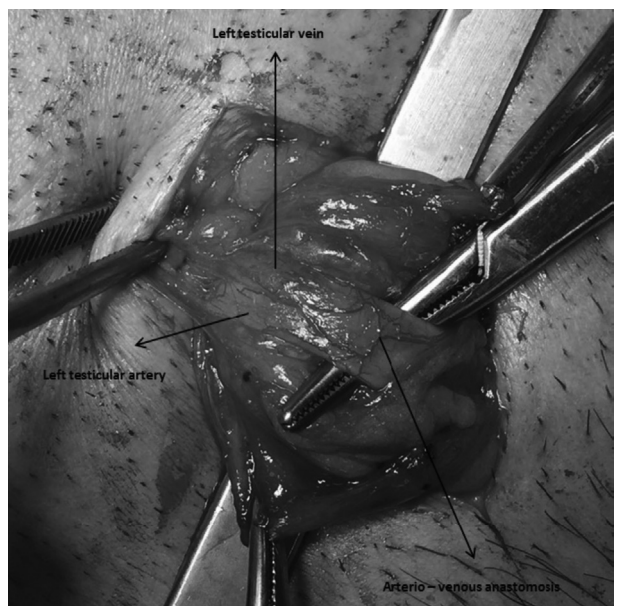


**Figure 2**: Arterio-venous anastomosis was seen after internal spermatic fascias were opened.

be seen 15% in right and 18% in left testicular veins (4). Asala et al reported that variation of gonadal veins are more common on left side than right side (5). Arterio-venous anastomosis between testicular vessels are extremely rare. Blood shunt from artery to vein may lead to varicocele in these cases (2,3). Spermiogenesis and hormone production may be affected because of the the

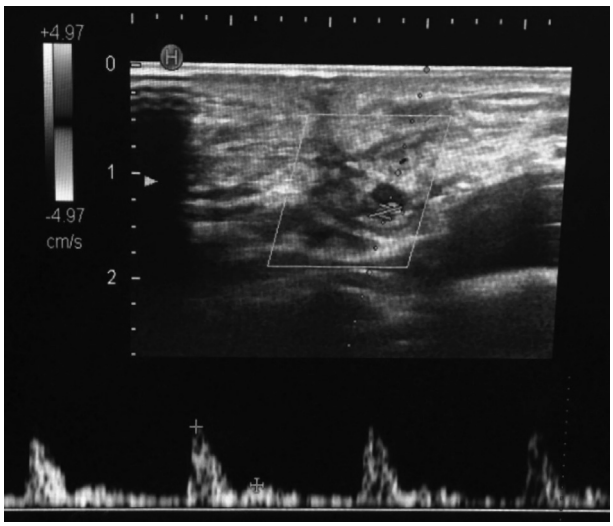


**Figure 3**: Six months later, control color doppler ultrasonography not detected blood flow in venous vessel.

shunt due to lack of proper oxygen supply. So an anastomosis may have some important results such as infertiliy or subfertility. In this case, we planned surgical treatment based on physical examination, radiological findings and spermiogram results but the arterio-venous anastomosis changed our treatment decision in the surgery. We think that such variations should not always be treated as in our case and treatment of other dilated vessels may be sufficient.

In conclusion, arterio-venous anastomosis of testicular vessels are a very rare condition and commonly diagnosed during varicocelectomy insidentally. According to our experience, active surveillance of this malformation with color doppler ultrasonography and spermiogram is an option for treatment modality.

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