



شبكة المعلومات الجامعية
التوثيق الإلكتروني والميكروفيلم

بسم الله الرحمن الرحيم



MONA MAGHRABY



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التوثيق الإلكتروني والميكروفيلم



شبكة المعلومات الجامعية التوثيق الإلكتروني والميكروفيلم



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جامعة عين شمس

التوثيق الإلكتروني والميكروفيلم

قسم

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MONA MAGHRABY



Outcome of Extended Varicocelectomy in Case of High Grade Varicocele

Thesis

*Submitted in Partial Fulfillment
of Master's Degree in Urology*

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بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

قَالَ

سَبَّحَانَكَ لَا إِلَهَ إِلَّا مَا عَلَّمْتَنَا إِنَّكَ أَنْتَ
الْعَلِيمُ الْعَظِيمُ

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INTRODUCTION

Varicocele is defined as abnormal dilation and tortuosity of the internal spermatic veins within the pampiniform plexus. It is common among adolescents and may contribute significantly to the risk of subfertility in adulthood (*Pinto et al., 1994*).

The prevalence of clinically diagnosed varicocele in adolescents is 8% to 10%, meanwhile the prevalence rate in adults is 15% (*Zampieri et al., 2008*).

The etiology of varicocele is unknown, while the left side varicocele predominance is believed to be due to increasing venous pressure in the left renal vein, collateral venous anastomosis, and valvular incompetence of the left internal spermatic vein at its junction with the left renal vein (*Cervellione et al., 2008*).

The presence of a varicocele is known to be associated with an adverse effect on spermatogenesis in a subset of men. The pathophysiology of this testicular dysfunction has been attributed to one or a combination of several mechanisms, including reflux of adrenal metabolites, hyperthermia, hypoxia, local testicular hormonal imbalance, and intratesticular hyperperfusion injury (*Kass et al., 2001*).

The toxic effect of varicocele may be manifested as testicular growth failure, semen abnormalities, leyding cell dysfunction, and histologic changes (tubular thickening, interstitial fibrosis, decreased spermatogenesis, maturation arrest) (**Hienz et al., 1980**).

A patient with varicocele is usually asymptomatic and often seeks an evaluation for infertility after failed attempts at conception. He may also report scrotal pain or heaviness (**Gat and Bachar, 2004**).

Careful physical examination remains the primary method of varicocele detection, the patient should be examined in both the supine and standing positions, the scrotum is inspected for visible swelling, followed by palpation of the spermatic cord at rest and during valsalva maneuver (**Bogaert et al., 2013**).

The clinical grading system defines varicocele as grade 0 (subclinical), nonpalpable and visualized only by ultrasonography; grade 1, palpable only with valsalva maneuver; grade 2, easily palpable but not visible; grade 3, easily visible.

An obvious varicocele is often described as felling a bag of worms (**Roy et al., 1989**).

Ultrasonography, particularly Doppler ultrasonography, confirm diagnosis of varicocele (**Zuin et al., 2008b**). Typical Doppler findings include venous flow at rest with intermittent or continuous flow reversal with valsalva.

Multiple grading systems exist for the purpose of classifying the dynamic sonographic findings of varicocele (**Stahl and Schlegel, 2010**).

Clinically relevant varicocele is associated with venous diameter more than 2.3 to 3 mm (**Chiou and Anderson, 1997**).

Dubin classification of dynamic sonographic findings of varicocele (**Chiou and Anderson, 1997**);

Grade description

- 0 Moderate, transient venous reflux during valsalva maneuver.
- 1 Persistent venous reflux that ends before the valsalva maneuver is complete.
- 2 Persistent venous reflux throughout the entire valsalva maneuver.
- 3 Venous reflux that is present under basal condition and does not change during valsalva maneuver.

Observation remains the approach of choice for the majority of adolescents with varicocele until a surgical indication is present (*Zampieri et al., 2008b*).

The indications for surgical intervention are significant left (more than or equal 20%) or bilateral testicular hypotrophy, pain, abnormal semen analysis findings, and cosmetic changes of the scrotum (*Zampieri et al., 2008b*).

The surgical decision for correction of varicocele revolves around (1) whether to spare the testicular artery and/or lymphatic using the the available approaches, and (2) the effect on the rate of recurrence and hydrocele formation (*Feber and Kass, 2008*).

There are many surgical approaches for correction of varicocele; laparoscopic or retroperitoneal, inguinal or subinguinal, or venographic (*Barroso et al., 2009*).

Retroperitoneal, laparoscopic, inguinal, and subinguinal approaches have the disadvantages of high incidence of recurrence rate and postoperative hydrocele formation. The recurrence rate is usually the result of preservation of periarterial plexus of veins (venae comitantes) along with the artery, dilated cremasteric veins, gubernacular veins, and the “perforating” veins (the anastomosing branches of the cremasteric veins which perforate the external spermatic fascia

to join the anterior scrotal veins), microsurgical inguinal and subinguinal varicocelelectomy is an effective procedure but still expensive and not spreaded in our country (*Watanabe et al., 2005*).

Subinginal extended varicocelelectomy with delivery of the testis allow ligation of the Gubernacular veins, cremasterc veins, and the “perforating” veins (the anastomosing branches of the cremasteric vein which perforate the external spermatic fascia to join the anterior scrotal veins), and sparing the testicular artery and lymphatic, thus we assume and believe that subinguinal extended varicocelelectomy with delivery of the testis will avoid the disadvantages and complications of other procedures.