



DIAGNOSTIC SIGNIFICANCE OF ULTRASOUND AND DOPPLEROGRAPHY IN PATIENTS WITH VARICOCELE

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ABSTRACT

Varicocele is an enlargement of the venous vessels in the scrotum that can negatively affect reproductive health and testicular development. Patients are often asymptomatic, especially with grade I–II varicocele. Therefore, physical examination does not always allow for an accurate diagnosis. Ultrasonography (USG) and Dopplerography are considered the most effective methods for assessing the degree of varicocele, venous regurgitation, and testicular growth. They are important for early diagnosis and treatment planning.

Introduction

Varicocele is an enlargement of the venous vessels in the scrotum that can negatively affect reproductive health and testicular development. Patients are often asymptomatic, especially with grade I–II varicocele. Therefore, physical examination does not always allow for an accurate diagnosis. Ultrasonography (USG) and Dopplerography are considered the most effective methods for assessing the degree of varicocele, venous regurgitation, and testicular growth. They are important for early diagnosis and treatment planning.

Objective

To evaluate the diagnostic efficacy of ultrasound and Dopplerography in patients with varicocele. To determine the degree of venous dilatation and testicular volume changes. To compare clinical and instrumental data and determine the possibilities of early diagnosis.

Materials and Methods

The study was conducted on the basis of retrospective and prospective observation. 120 adolescent patients aged 12–18 years were examined by physical examination and USG + Dopplerography. The degree of varicocele was determined by palpation and then confirmed by ultrasound. Testicular volume and venous regurgitation were assessed by USG. Dopplerography was used to determine the presence and frequency of venous regurgitation.

Results and Discussion

The study included 120 adolescent patients with varicocele. Palpation revealed grade I varicocele in 7% of patients, grade II in 25%, and grade III in 42%. Ultrasonography (USG) revealed grade I varicocele in 13%, grade II in 33%, and grade III in 46%. Dopplerography was the most sensitive diagnostic method, detecting grade I varicocele in 14%, grade II in 38%, and grade III in 46%. Varicoceles were most common on the left side (88%), right side in 10%, and bilateral in 2% of patients. Venous regurgitation was detected by Doppler in patients with grade I–II varicocele, but not by palpation. Patients with a testicular volume difference of ≥ 2 ml accounted for 20%, indicating a risk of reduced reproductive function. The study showed that palpation is effective only in detecting grade III varicocele. Grade I–II varicocele is often asymptomatic and can only be detected using USG and Doppler. Doppler is the most sensitive method for detecting venous regurgitation, which is important for early diagnosis and treatment planning. Testicular volume monitoring can assess the growth difference and the risk of reproductive complications.

Conclusion

Ultrasonography and Doppler have high sensitivity in the diagnosis of varicocele. Palpation is sufficient only for detecting grade III varicocele. Doppler helps to detect asymptomatic grade I–II varicocele. Early diagnosis and monitoring play an important role in preserving reproductive function and reducing the risk of infertility.

References:

1. Durdiyev, S. (2026, January). CLINICAL COURSE AND DIAGNOSIS OF OMPHALOCELE-GASTROSCHISIS IN NEWBORNS. In International Conference on Health & Technology (Vol. 2, No. 1, pp. 80-82).
2. Ruzmatov, I., & Durdiyev, S. (2026, January). CHOICE OF TREATMENT METHODS FOR GASTRASHYSIS AND OMPHALOCELE IN INFANTS. In International Conference on Health & Technology (Vol. 2, No. 1, pp. 83-85).
3. Bakhtiyorovich, R. I., & Hayitboy o'g'li, D. S. (2026). Compilation of an Algorithm for Prenatal Identification and Management of Anterior Abdominal Wall Button Defects in Infants. Spanish Journal of Innovation and Integrity, 50, 90-92.
4. Bakhtiyorovich, R. I., & Hayitboy o'g'li, D. S. (2026). Prenatal Diagnosis of Gastroschisis and Selection of the Most Optimal Treatment Tactics in a Perinatal Center Setting. Spanish Journal of Innovation and Integrity, 50, 86-89.
5. Bakhtiyorovich, R. I., & Hayitboy o'g'li, D. S. (2026). Diagnosis and Treatment of Gastroschisis in Newborns. Spanish Journal of Innovation and Integrity, 50, 83-85.
6. Bakhtiyorovich, R. I., & Hayitboy o'g'li, D. S. (2026). Development of an Algorithm for the Treatment and Management of Infants Born with Omphalocele and Gastroschisis. Spanish Journal of Innovation and Integrity, 50, 93-95.