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**Correlation between ultrasound and spermogram data in patients with varicocele (About 40 cases)**

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**Abstract**

Varicocele is defined as abnormal and/or tortuous dilation of the scrotal veins of the pampiniform plexus. It is found in 15% to 20% of the general male population, 35% of men with primary infertility, and over 70% with secondary infertility.

The diagnosis of varicocele is essentially clinical. It can be completed by paraclinical explorations, in particular ultrasound and echodoppler, which allow to confirm the diagnosis in case of doubt, and to evaluate its repercussion on the testicle, in particular on the size, the consistency and the volume of the testicle.

The spermogram is one of the first-line biological tests. However, the real interest of varicocele treatment on the improvement of male fertility remains controversial.

The main objective of our work is to verify the correlation between ultrasound and spermogram data in patients with varicocele by a retrospective study of a sample of 40 patients, during a period of three years. This is a retrospective study, conducted in the urology department of the Hassan II University Hospital of Fez, in patients followed for varicocele over a period of 3 years from January 2020 to October 2022.

A total of 40 patients with varicocele participated in our study, with a mean age of 29.14. The varicocele was bilateral in 15 patients, right in 1 patient and left in 24 patients. Clinical grade 3 was present in 18 patients, grade 2 in 15 patients, grade 1 in 5 patients and grade 0 in 2 patients. The most frequent spermogram abnormality found preoperatively in our series was oligoasthenozoospermia. After surgical treatment, we noted an improvement in 3 spermograms with an average follow-up of 3 months.

On the right, ultrasound grade 2 was present in 9 patients, while on the left grade 3 was the most represented, observed in 19 patients.

**Introduction**

Varicocele is a condition in which the scrotal veins of the pampiniform plexus become abnormally dilated and tortuous. It is prevalent in 15% to 20% of men, 35% of men with primary infertility, and over 70% of men with secondary infertility. Diagnosis is mainly clinical, with paraclinical tests such as ultrasound and echodoppler used to confirm the diagnosis and assess its impact on the testicle. The spermogram is often used to guide treatment decisions, but the effectiveness of varicocele treatment on male fertility improvement is still debated.

**Materials and methods**

This is a retrospective study, conducted in the urology department of the Hassan II University Hospital of Fez, in patients followed for varicocele.

This study covers a period of 3 years from January 2020 to October 2022. All

patients meeting these criteria were included in this study.

**Table 1:** Distribution of patients according to postoperative sperm parameters.

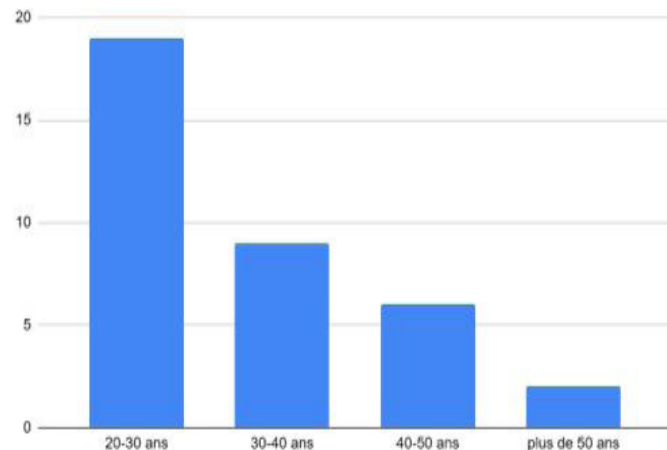
Anomalies	Effects	Pourcentage
Asthénozoospermie	2	5 %
Normal	10	25 %
Oligo-asthéo-térazoospermie	6	15 %
Oligozoospermie	4	10%
Asthéo-térazoospermie	3	7,5%
Azoospermie	5	12,5 %
Oligo-asthénozoospermie	7	17,5%
Térazoospermie	1	2,5%
Oligotérazoospermie	1	2,5 %
Asthéo-nécrozoospermie	1	2,5 %
Total	40	100 %

**Results**

A total of 40 patients with varicocele participated in our study, the mean age was 29.14. The varicocele was bilateral in 15 patients (37.5%), right in 1 patient (2.5%) and left in 24 patients (60%).

Clinical grade 3 was present in 18 patients (45%), grade 2 in 15 patients (37.5%), grade 1 in 5 patients (12.5%) and grade 0 in 2 patients (5%). The most frequent spermogram abnormality found preoperatively in our series was oligoasthenozoospermia, i.e. 17.5%. After surgical treatment, we noted an improvement in 3 spermograms with an average follow-up of 3 months.

On the right, the ultrasound grade 2 was present in 9 patients (52.9%), while on the left the grade 3 was the most represented, observed in 19 patients (47.5%).



**Figure 1:** Age distribution of patients with varicocele in the study population.

**Discussion**

Scrotal pain is a frequent reason for consultation as suggested by several studies as well as our own (1) The recommendations of the Committee of Andrology and Sexual Medicine of the AFU regarding the management of Varicocele concluded that varicocele was the leading cause of male infertility (2)

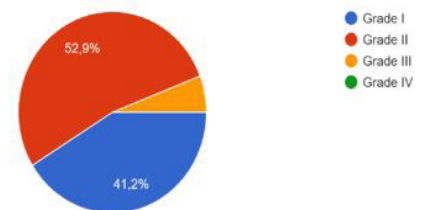
Most studies show a left-sided predominance of varicocele, but some studies show a bilateral predominance.

There is a correlation between the severity of the varicocele and the occurrence of testicular hypotrophy: up to 20% of grade 3s are accompanied by testicular atrophy (3). In our study we found that 23.5% of grade 3 varicocele were associated with testicular hypotrophy.

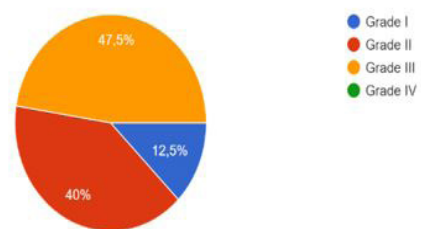
Ultrasound shows dilated veins as onychogenic, tortuous, tubular structures located along the spermatic cord with an average diameter greater than 3 mm (4).

After surgical treatment the number of spontaneous pregnancies obtained was nil, this is explained by the fact that in our study the objective is to prove the correlation between ultrasound and spermogram data in patients with varicocele, whatever their reason for consultation, regardless of fertility. On the other hand, surgical treatment of varicocele in our series as well as in the literature has shown an improvement of the sperm parameters most involved in terms of fertility and pregnancy. This is interesting and indicates that varicocele surgery can be

Grades radiologiques de la varicocèle A DROITE  
17 réponses



Grades radiologiques de la varicocèle A GAUCHE  
40 réponses



**Figure 2:** Distribution of ultrasound grades on the right and on the left.

attempted in infertile men and would eventually be followed by either spontaneous procreation or assisted reproductive technology.

### Conclusion

Numerous studies regarding the correlation of ultrasound and spermogram data and the improvement of fertility after treatment of varicocele have been published

In our study, the objective was to demonstrate the correlation that exists between ultrasound and spermogram data in patients with varicocele in the study population, which we were able to find; the more severe the spermogram abnormalities, the higher the radiological grade of the varicocele and the higher the radiological grade of the varicocele, the more severe the spermogram abnormalities. Surgical treatment of clinical varicocele associated with a spermogram abnormality had allowed an improvement of the spermatoc parameters.

### References

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