


## SEMINAL VESICLE AMYLOIDOSIS: A CASE REPORT

 <https://doi.org/10.56238/arev6n4-452>

Submitted on: 27/11/2024

Publication date: 27/12/2024

**Jose Lucas Rodrigues Salgueiro, Otavio Soriano Teruel Pagamisse, Giovanni Pereira Camacho Roque, Felipe Fernandes Iazzetti, Daniela Gonçalves de Souza, Lucas Diniz Afonso, Arthur Tiemann Paíão, Luis Armando Souza Vieira, Maria Clara Périgo Perez and Bruno César Framel Sanches**

### ABSTRACT

Amyloidosis is a medical condition of unknown etiology, characterized by the deposition of amyloid proteins in tissues. Urological involvement is rare and occurs mainly in the kidneys and seminal vesicles. Involvement of the seminal vesicle is infrequent, although often asymptomatic, some patients may present symptoms such as hematospermia, suprapubic pain, and obstructive signs. The diagnosis requires imaging tests complemented by transrectal biopsy, and confirmed by the Congo red staining test. The definitive treatment consists of surgical resection, often performed laparoscopically/minimally invasively. We report a case of seminal vesicle amyloidosis in a patient who started with persistent hematospermia.

**Keywords:** Amyloidosis. Seminal vesicle. Hematospermia.

## INTRODUCTION

The deposition of amyloid proteins can occur in different organs and has a higher prevalence of males when compared to females [1]. Seminal vesicle amyloidosis is a rare clinical-pathological condition, whose etiology is unknown [2]. The classification of this disease is determined by some main criteria, which, according to the literature, are evaluated by systemic or localized location, hereditary or acquired character, and the type of amyloidogenic protein [3].

This pathology consists of a metabolic disorder of proteins, so that its manifestation occurs through the deposition of amyloid proteins (fibrillar) in the interstitium of the tissues. The literature indicates that the most prevalent urological involvement occurs in the kidneys, followed by the seminal vesicles, which represent the second most common urinary organ to be affected[2]. The clinical presentation of amyloidosis, in most cases, is asymptomatic. However, some cases present symptoms when localized deposition occurs, such as in the seminal vesicle. In these patients, hematospermia, suprapubic or perineal pain, and obstructive symptoms may occur [1,4].

Symptoms and clinical evaluation can lead to diagnostic investigation through complementary tests such as Ultrasound, Computed Tomography and Magnetic Resonance Imaging[5]. The presentation of the pathology in the seminal vesicle appears with color alteration, paramagnetic contrast uptake and irregularities [5]. Once a suspicious lesion is identified, microscopic evaluation and transrectal biopsy can be essential for diagnosing this rare pathology. It is worth noting that the main definitive treatment of lesions is surgical resection of the lesion [2]. In view of the above, the purpose of the present study is to report a case of seminal vesicle amyloidosis, in which the patient underwent vesiculectomy by means of robotic laparoscopic surgery.

## OBJECTIVE

To report a case of seminal vesicle amyloidosis.

## CASE REPORT

A 50-year-old male patient, healthy, with no comorbidities, use of medications, and surgical history. He denies a family history of cancer. The patient presented with persistent macroscopic hematospermia for one year. Initially, it was intermittent and painless, starting

after regular sexual intercourse without any trauma involved. At this point, he sought a urologist to investigate the cause.

The physical examination was normal: penis and testicles did not show any abnormal signs, and digital rectal examination showed a prostate of normal consistency, approximately 30g and without any nodules. The laboratory tests initially requested showed total PSA 0.89 mg/mL, free PSA 0.28 ng/mL, normal renal function and routine urine without alterations, abdominal ultrasonography without alterations, and prostate ultrasonography with 30g of prostate and no nodule, some irregularities in the left seminal vesicle.

The spermogram shows 2200 red blood cells and a normal white blood cell count. (Figure 1)

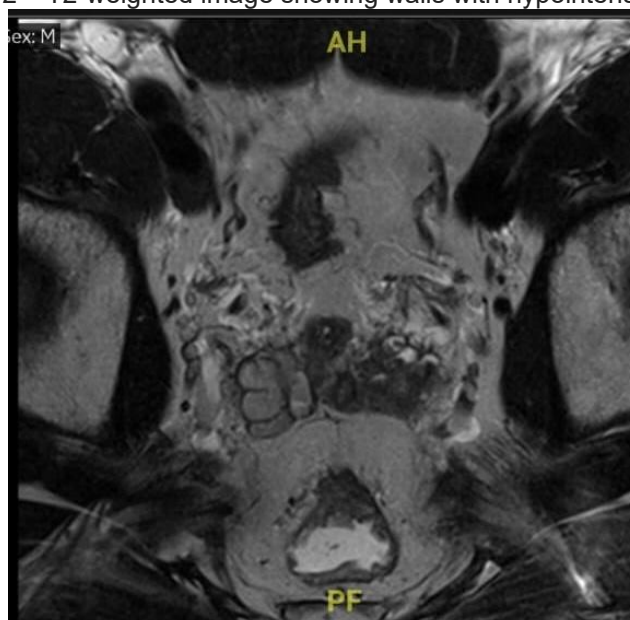
After the initial investigation, MRI of the male pelvis was requested, which showed a thickening of the seminal vesicle on the left and probable hematic/protein content.

The patient presented an increase in the frequency of hematospermia, occurring in all ejaculations, and an increase in the intensity of bleeding, which led him to urological investigation again. New laboratory tests were repeated, indicating total PSA of 0.94 ng/mL and free PSA of 0.28 ng/mL. Spermogram increased hematoscopy which showed 70,000 red blood cells and cultures negative for germs. PSA value of 0.8 and physical examination (prostatic digital rectal examination) normal. Opted for a repeat MRI in October/2023, This exam showed an unaltered prostate with 26g and PIRADS 1. Increased thickening of the left seminal vesicle with high protein level. (Figure 2) The therapeutic possibilities were discussed with the patient and a surgical approach was chosen, and vesiculectomy with robotic access was indicated.

Figure 1 – Spermogram with hematospermia

ESPERMOGRAMA		Intervalo de Referência
<b>Características Gerais</b>		
Volume .....	1,2 mL	Superior ou igual 1,5 mL
Cor .....	AMARELO ESCURO	Branco Opaco
Odor .....	PRÓPRIO	Próprio
Aspecto .....	HOMOGÊNEO	Homogêneo
Consistência .....	NORMAL	Normal
Tempo de Liquefação:	45 MINUTOS	Até 60 minutos
pH .....	7,5	Superior ou igual a 7,2
<b>Microscopia</b>		
Espematozóides.....	150.000.000 /mL	15.000.000/mL
Leucócitos .....	600/uL	Até 1.000 /uL
Hemácias .....	2200/uL	Até 1.000 /uL
<b>Motilidade</b>		
Progressiva rápida:	42%	Acima de 32%
Progressiva lenta:	12%	
Estacionária.....	9%	
Imovel .....	37%	
<b>Vitalidade</b>		
VIVOS .....	70%	
MORTOS .....	30%	
<b>Conclusão:</b> Em amostra coletada no laboratório, verificou-se: ERITROSPERMIA E HIPOSPERMIA		

Figure 2 – T2-weighted image showing walls with hypointense signal

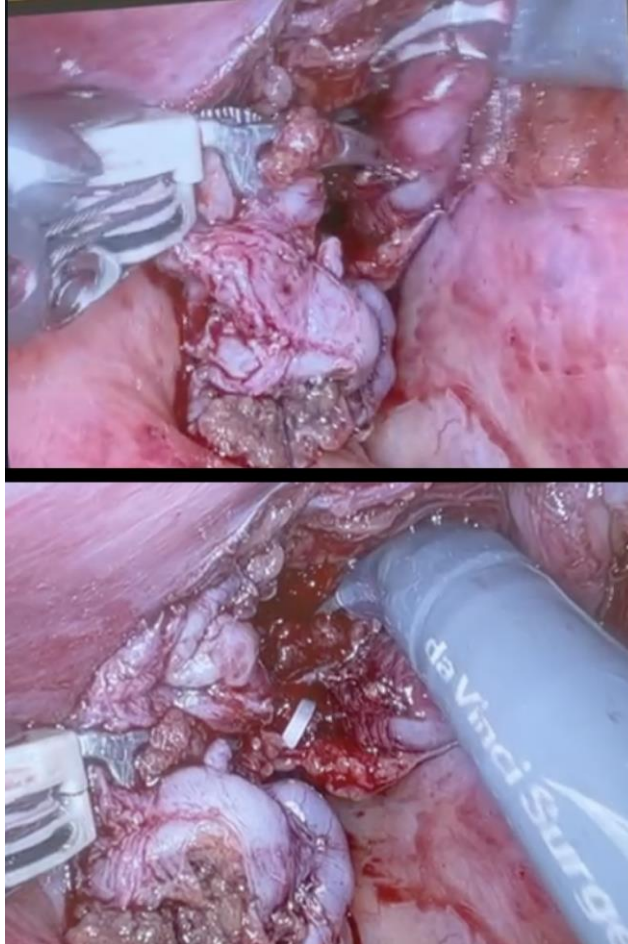


Patient undergoing vesiculectomy. Laparoscopic robotic surgery with 6 trocars was indicated and posterior access was performed through the Douglas fundus.

Opening of the peritoneum posteriorly and reaching the left seminal vesicle. Adhesions and removal of the seminal vesicle were released after ligation with clips at its

base near the prostate and with neurological preservation and vas deferens (Figure 3). Frozen biopsy material was sent, which ruled out malignancy, and it was decided to terminate the procedure (Figure 4).

Figure 3 - Vesiculectomy with robotic laparoscopic surgery.



The patient evolved in good condition and without complaints, and was discharged from the hospital on the second postoperative day.

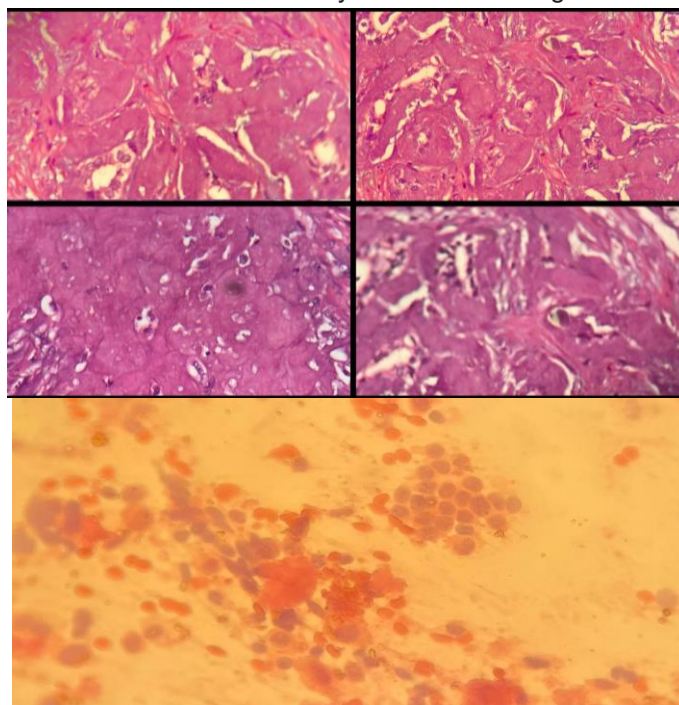


Figure 4 - Material for biopsy.



After surgery, an anatomopathological analysis was performed with findings suggestive of amyloidosis and sent for confirmation with the Congo red technique. The technique confirmed the diagnosis of left seminal vesicle amyloidosis (Figure 4).

Figure 5 - Left seminal vesicle amyloidosis with Congo red technique.



At follow-up, the patient progressed in good condition and without complaints Good sexual intercourse and no longer presented hematospermia. Spermogram was performed 3 months after the procedure without hematospermia and 600 red blood cells.

## DISCUSSION

Seminal vesicle amyloidosis is a rare condition, usually diagnosed incidentally and asymptotically during investigations of other urologic pathologies. The development of amyloid fibrils occurs in the extracellular matrix and is a multifactorial process that varies between different types of amyloid, making diagnosis difficult without specific investigation. The classification of amyloidosis is based on the plasma precursor proteins that form fibril deposits, with a common beta-fibrillar structure. [6]

Localized amyloidosis of the urogenital tract is rare, with a higher incidence in the kidneys, followed by the seminal vesicle. [6] The risk of amyloidosis increases with age, being more common over 50 years of age (14%) and by 21% over 75 years of age. [2] Amyloid deposits in the seminal vesicles are found incidentally in prostate biopsies, and their occurrence may be underestimated, with an incidence of 1-5% in cases of localized amyloidosis. [7]

In the case reported, the diagnosis was made after investigation of persistent, initially painless and intermittent hematospermia, a common but nonspecific symptom.

Laboratory tests showed significant erythrospemia with red blood cells of 2200/uL, which reinforced the need for further investigation. Magnetic resonance imaging revealed hematic/hyperprotein content in the left seminal vesicle, a typical finding in cases of amyloidosis, as described in the literature. [8,9] Other similar case reports document symptoms such as suprapubic pain and urinary obstruction, which can be mistaken for urologic malignancies, which leads to differential diagnoses such as prostate cancer. [10] In this case, transrectal biopsy and analysis with Congo Red staining were crucial to differentiate amyloidosis from a possible malignant neoplasm.

Robotic vesiculectomy was the minimally invasive surgical approach of choice based on imaging confirmation of alterations compatible with amyloid deposition in the left seminal vesicle. Surgical resection is the most effective method to treat localized amyloidosis, especially when malignancy is suspected, or to relieve obstructive symptoms and resolve hematospermia. [6]

The postoperative course was favorable, with **complete resolution of hematospermia and absence of significant complications. In cases of localized amyloidosis, the prognosis is usually positive when treated surgically, without recurrence of symptoms. [5] The anatomopathological analysis confirmed the diagnosis of amyloidosis by staining with the Congo red technique, and the biopsy**

ruled out malignancy, reinforcing the efficacy of the surgical treatment and the good clinical outcome.

## **CONCLUSION**

Seminal vesicle amyloidosis is a rare condition and suspicion should always be made in cases of persistent hematospermia. The surgical approach corresponds to the main form of resolution of the case.



## REFERENCES

1. Argon, A., Simşir, A., Sarsik, B., Tuna, B., Yörükoğlu, K., Niflioğlu, G. G., & Sen, S. (2012). Amiloidose de vesículas seminais: Incidência e características patológicas. *Türk Patoloji Dergisi*, 28(1), 44-48. <https://doi.org/10.5146/tjpath.2012.01096>. Acesso em: 27 set. 2024.
2. Mariotti, V. C., Mariotti, A. C. H., Grecco, L. P., Trombeli, G. H. P., Bortoletto, G., & Caldeira, L. C. (2023). Amiloidose de vesícula seminal: Um relato de caso. *Revista Urominas*, 42, 77-79. Recuperado de [https://urominas.com/wp-content/uploads/2023/12/42\\_Amiloidose\\_de\\_Vescula\\_Seminal\\_Um\\_Relato\\_de\\_Caso.pdf](https://urominas.com/wp-content/uploads/2023/12/42_Amiloidose_de_Vescula_Seminal_Um_Relato_de_Caso.pdf). Acesso em: 27 set. 2024.
3. Briggs, G. W. (1961). Amiloidose. *Anais de Medicina Interna*, 55, 943-957. <https://doi.org/10.7326/0003-4819-55-6-943>. Acesso em: 27 set. 2024.
4. Maroun, L., Jakobsenn, H., Kromann-Andersen, B., & Horn, T. (2003). Amiloidose da vesícula seminal: Relato de caso e revisão da literatura. *Scandinavian Journal of Urology and Nephrology*, 37(6), 519-521. <https://doi.org/10.1080/00365590310001764>. Acesso em: 27 set. 2024.
5. Furuya, S., Masumori, N., Furuya, R., Tsukamoto, T., Isomura, H., & Tamakawa, M. (2005). Caracterização da amiloidose localizada na vesícula seminal causando hemospérnia: Uma análise usando imunohistoquímica e ressonância magnética. *The Journal of Urology*, 173(4), 1273-1277. <https://doi.org/10.1097/01.ju.0000152291.44802.9f>. Acesso em: 27 set. 2024.
6. Falk, R. H., Comenzo, R. L., & Skinner, M. (1997). As amiloidoses sistêmicas. *The New England Journal of Medicine*, 337(13), 898-909. <https://doi.org/10.1056/NEJM199709253371306>. Acesso em: 27 set. 2024.
7. Yang, Z., Laird, A., Monaghan, A., Seywright, M., Ahmad, I., & Leung, H. Y. (2013). Amiloidose incidental da vesícula seminal observada em biópsias prostáticas diagnósticas: São necessárias investigações rotineiras para amiloidose sistêmica? *Asian Journal of Andrology*, 15(1), 149-151. <https://doi.org/10.1038/aja.2012.125>. Acesso em: 27 set. 2024.
8. Gilani, S. I., et al. (2023). Identificação de amiloidose do trato urinário e próstata: Oportunidades para diagnóstico precoce e intervenção na doença sistêmica. *Human Pathology*, 142, 62-67. <https://doi.org/10.1016/j.humpath.2023.11.001>. Acesso em: 27 set. 2024.
9. Furuya, S., Masumori, N., Furuya, R., Tsukamoto, T., Isomura, H., & Tamakawa, M. (2005). Caracterização da amiloidose localizada da vesícula seminal causando hemospérnia: Uma análise usando imunohistoquímica e ressonância magnética. *The Journal of Urology*, 173(4), 1273-1277. <https://doi.org/10.1097/01.ju.0000152291.44802.9f>. Acesso em: 27 set. 2024.

10. Rath-Wolfson, L., Bubis, G., Shtrasburg, S., Shvero, A., & Koren, R. (2017). Amiloidose do trato seminal: Amiloidose sincrônica das vesículas seminais, ductos deferentes e ductos ejaculadores. *Pathology Oncology Research: POR*, 23(4), 811-814. <https://doi.org/10.1007/s12253-017-0193-7>. Acesso em: 27 set. 2024.