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Venous Aneurysm low Prevalence in the Medical Field: An Article Review

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Abstract

Venous aneurysms are abnormal dilations of veins and are relatively rare compared to arterial aneurysms. They can occur in various veins, such as the jugular, femoral, cava, and splanchnic veins, and are often diagnosed incidentally due to their asymptomatic presentation or vague symptoms. Although benign in most cases, they can lead to serious complications such as thrombosis, pulmonary embolism, and rupture, making early diagnosis and appropriate treatment essential. The medical literature on venous aneurysms is limited, reflecting their rarity and associated diagnostic challenges. Their lower prevalence is attributed to the reduced blood pressure exerted on the vein walls, and risk factors include congenital causes, inflammation, and trauma. Diagnosis is typically made through imaging tests, such as ultrasound or magnetic resonance imaging (MRI). When symptomatic, patients may experience pain, edema, or a feeling of heaviness. Treatment depends on symptom severity and the risk of complications. In many cases, a conservative approach with regular follow-up is adopted. However, aneurysms at higher risk of complications may require surgical or endovascular intervention. The lack of clear treatment guidelines highlights the need for more research and greater awareness of venous aneurysms.

Keywords: *Aneurysm. Doppler. Venous. Trauma. Surgical. Rare.*

Introduction

Venous aneurysm is a relatively rare condition characterized by the abnormal dilation of a vein, which, unlike arterial aneurysms, has a significantly lower prevalence in clinical practice. While the medical literature is vast, the prevalence of venous aneurysms is notably lower compared to arterial aneurysms, which are more widely studied and discussed. They can occur in various locations, such as the cava vein, jugular veins, femoral veins, and splanchnic veins, but are rarely diagnosed due to their insidious clinical presentation and lack of characteristic symptoms. Although generally benign, venous aneurysms can present complications such as thrombosis, pulmonary embolism, or rupture, making early diagnosis and proper treatment essential. However, the medical literature still lacks detailed information regarding the prevalence, etiology, diagnosis, and management of these aneurysms. This lack of information can be attributed to several factors, including the rarity of the condition and the difficulty in diagnosing it. This study aims to explore the available literature on venous aneurysms, discussing their prevalence, clinical characteristics, and implications for diagnosis and treatment.

Objectives

This study aims to review relevant scientific articles on the subject, highlighting the low prevalence of venous aneurysms and their underestimation in the medical field. It explores the context of a rare and often neglected condition, emphasizing the need for more research and awareness in the medical community regarding venous aneurysms.

Materials and Methods

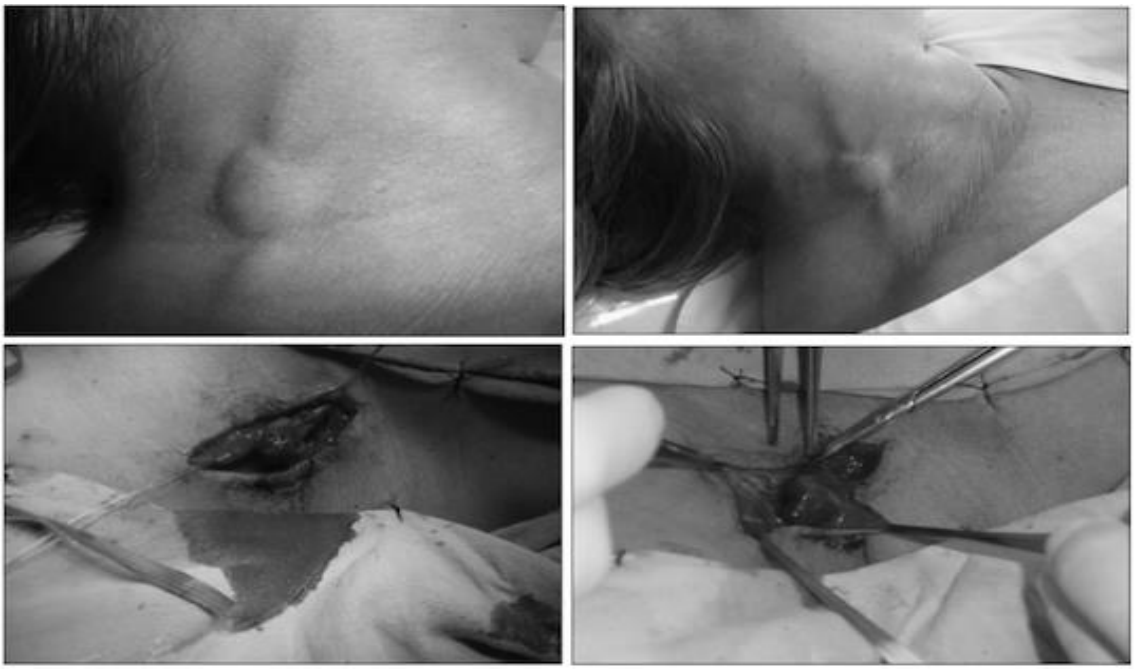
A review was conducted, including articles from the PUBMED, ScienceDirect, and Scielo databases as the foundation for this study.

Discussion

Venous aneurysms are classified according to their location and morphological characteristics. The prevalence of venous aneurysms is significantly lower compared to arterial aneurysms. Studies indicate that these aneurysms can occur in any vein but are most commonly found in peripheral veins, such as those in the extremities or the jugular vein. The difficulty in diagnosing venous aneurysms often arises from their rarity and symptoms that may be vague or resemble other vascular conditions. The asymptomatic nature of many venous aneurysms contributes to the low rate of diagnosis, with many cases being discovered incidentally during imaging performed for other reasons. When symptomatic, venous aneurysms may cause pain, a feeling of heaviness, or local edema. Definitive diagnosis usually requires advanced imaging techniques such as ultrasound or MRI, which can differentiate between venous aneurysms and other vascular pathologies. Treatment of venous aneurysms can vary depending on size, location, and associated symptoms. In many cases, conservative treatment is sufficient, especially if the aneurysm does not cause significant symptoms. However, for symptomatic aneurysms or those at risk of complications, surgical intervention or endovascular procedures may be necessary. The lack of widely established treatment protocols and specific guidelines reflects the need for further research to define effective therapeutic strategies.

The prevalence of venous aneurysms is considerably lower compared to arterial aneurysms, mainly due to the reduced pressure exerted by blood on the vein walls. Studies suggest that congenital factors, inflammation, trauma, and abnormalities in blood flow may be implicated in the formation of these aneurysms, but evidence remains limited. Furthermore, most cases reported in the literature involve asymptomatic patients or those with nonspecific symptoms, such as localized pain or edema, contributing to underdiagnosis. It is also worth noting that most reported cases involve the jugular and femoral veins, where they can be mistaken for other venous conditions, such as varicose veins. In a review of published cases, venous aneurysms are commonly diagnosed incidentally during imaging exams, such as ultrasound, computed tomography (CT), or magnetic resonance imaging (MRI). In some cases, thrombosis associated with the aneurysm is the first significant clinical manifestation, highlighting the importance of early and careful diagnosis.

Figures 1 and 2: Non-pulsatile swelling in the palmar region of the right hand. Aneurysmectomy with proximal and distal ligation of the aneurysm.



Figures 3, 4, 5, and 6: Subcutaneous mass on the right side of the neck. Dissection of aneurysm in the jugular vein.

Conclusion

Venous aneurysms, though rare, represent a clinical condition that deserves more attention in the medical literature. The low prevalence and often asymptomatic presentation contribute to the scarcity of data and challenges in diagnosis and treatment. Future research should focus on identifying specific risk factors, developing more effective diagnostic guidelines, and establishing evidence-based treatment protocols. Greater awareness of this condition may improve early detection and proper management, ensuring that patients with venous aneurysms receive the necessary care to prevent complications and improve quality of life. There is a need to raise awareness of venous aneurysms in the medical field and encourage further research to improve understanding of their etiology, diagnosis, and management. More effective diagnostic strategies and proper clinical follow-up are essential to ensure the safe management of these patients. In terms of treatment, there is no consensus on the best approach due to the lack of robust clinical studies. In asymptomatic cases, expectant management, with periodic follow-up through imaging exams, is usually the first choice. However, when the aneurysm poses a risk of serious complications, such as thrombosis or rupture, surgical intervention may be recommended. The literature also highlights that the lack of knowledge about venous aneurysms can lead to undertreatment or inadequate interventions, as the criteria for surgical or conservative treatment are not clearly established.

References

1. PANEBIANCO, V. et al. Venous aneurysms: clinical presentation, diagnosis, and management. **Journal of Vascular Surgery**, v. 64, n. 5, p. 1532-1540, 2016.
2. SFYROERAS, G. S. et al. Venous aneurysms: a review. **European Journal of Vascular and Endovascular Surgery**, v. 34, n. 4, p. 519-524, 2007.
3. TRIGAUX, J. P. et al. Venous aneurysms of the neck: a report of two cases. **Journal of Clinical Ultrasound**, v. 35, n. 7, p. 409-413, 2007.
4. KIM, H. et al. Incidental detection of venous aneurysms during routine imaging: management strategies. **Radiology Case Reports**, v. 10, n. 2, p. 16-19, 2015.
5. CALLIGARO, K. D. et al. Diagnosis and management of venous aneurysms. **Annals of Vascular Surgery**, v. 8, n. 4, p. 334-340, 1994.
6. GANDINI, R. et al. Endovascular treatment of venous aneurysms: a report of a single-center experience. **CardioVascular and Interventional Radiology**, v. 33, n. 2, p. 396-401, 2010.
7. MAVOR, G. E. et al. True aneurysms of the venous system. **Annals of Surgery**, v. 158, n. 3, p. 556-563, 1963.
8. LAITAKARI, J. A. et al. Venous aneurysm: an underdiagnosed entity. **Vascular Medicine**, v. 19, n. 1, p. 29-34, 2014.
9. SHANKAR, S. et al. Giant venous aneurysm: case report and review of literature. **Indian Journal of Radiology and Imaging**, v. 22, n. 4, p. 251-254, 2012.
10. RAPP, J. H. et al. Symptomatic venous aneurysms: diagnosis and treatment. **Journal of Vascular Surgery**, v. 19, n. 1, p. 48-54, 1994.
11. EL SAYED, M. S. et al. Management of jugular venous aneurysms: a comprehensive review. **Annals of Vascular Surgery**, v. 23, n. 2, p. 329-336, 2009.
12. RAY, B. et al. Ultrasonographic diagnosis of venous aneurysm in children: a case report. **Pediatric Surgery International**, v. 24, n. 12, p. 1393-1395, 2008.