Vexus Score: Avaliação da Congestão no Presente, Pensando o Futuro

Vexus Score: Congestion Assessment in The Present, Imagining the Future

Ricardo Silva Veiga, José Pedro Fonseca

Palavras-chave: Insuficiência Cardíaca; Lesão Renal Aguda; Medicina de Emergência; Ultrassonografia.

Keywords: *Acute Kidney Injury; Emergency Medicine; Heart Failure; Ultrasonography.*

Dear Editor

A case report[1] was recently published in the journal *Medicina Interna*, on the application of the Vexus score in the management of constrictive pericarditis, illustrating its usefulness in the management of critically ill patients.

The venous excess ultrasound score (Vexus Score) is a complementary tool for the assessment of venous congestion, and consequently the patient's volume status, through Doppler/pulsed Doppler of the hepatic, portal and interlobar renal veins. Its introduction in clinical practice serves as a complement to the assessment of the inferior vena cava, which, despite having been classically used as an ultrasound tool to assess volume status, it is known that several factors affect the feasibility of its assessment, such as tricuspid insufficiency leading to increased right atrial pressure, liver cirrhosis or other factors that increase abdominal pressure.

Beaubien-Souligny *et al*[2] demonstrated the usefulness of the Vexus score in predicting the risk of acute kidney injury in patients undergoing cardiac surgery, and since then the interest of the scientific community has been awakened. Its use has undergone an exponential growth, and the need for validation for the prediction of kidney injury/volemic management in clinical contexts often managed by internists, cardiologists and nephrologists, is imperative. It is therefore important to recognize situations where the application of this method is biased such as cardiac arrhythmias, chronic lung disease, and increased abdominal pressure.[3] In addition, it is important to bear in mind the increased difficulty of acquiring images in Doppler mode, compared to acquisition in B mode (gray scale) as well as the frequent difficulty in performing Doppler echo of the renal interlobar veins, even more in some clinical contexts where Vexus is useful (patients with chronic kidney disease). The aforementioned, associated with the fact that isolated echographic evaluations, such as the evaluation of the inferior vena cava, or the evaluation of the intrarenal venous pattern (which proved to be the marker with the highest correlation with admission, discharge and follow-up) are proof of the usefulness of associating the Vexus score with other ultrasound tools such as the evaluation of the pulsatility of the femoral vein, tricuspid annular plane systolic excursion (TAPSE) measurement or pulmonary echoscopy[4] in order to increase diagnostic accuracy, always remembering that point-of-care ultrasound (POCUS)is a complementary tool to anamnesis and objective examination, and should not be used alone. The most useful moment of its applicability is the admission of the patient and the follow-up, and it is even a predictor of mortality upon admission.[5] There are several applications for this tool, especially volume management in congestive patients, with greater utility in identifying patients in need of fluid removal than in patients who are in need for intravascular volume.[4] In conclusion, Vexus score is a tool that changes the paradigm of assessing venous congestion, and consequently, the patient's hemodynamic status, emphasizing the venous component as a crucial element of the patient's circulating volume, and allowing to quantify it, through a reproducible score and with a rewarding learning curve for those with some POCUS experience. It still lacks validation in the management of acute kidney injury and hearth faillure, but this task is also up to us, bearing in mind the limitations of its application, but aware of its potential in terms of reproducibility, multiorgan evaluation, quantification of congestion, and especially the ability to guide the decongestive strategy. ■

Declaração de Contribuição

RSV – Elaboração do manuscrito

JPS – Revisão do manuscrito

Todos os autores aprovaram a versão final a ser publicada.

Contributorship Statement

RSV – Preparation of the manuscript

JPS – Revision of the manuscript

All authors approved the final draft.

Serviço de Medicina Interna, Hospital de São Teotónio, Centro Hospitalar de Tondela-Viseu, Viseu, Portugal

https://doi.org/10.24950/rspmi/2321

Responsabilidades Éticas

Conflitos de Interesse: Os autores declaram não possuir conflitos de interesse.

Suporte Financeiro: O presente trabalho não foi suportado por nenhum subsídio ou bolsa.

Proveniência e Revisão por Pares: Comissionado; Sem revisão externa por pares.

Ethical Disclosures

Conflicts of Interest: The authors have no conflicts of interest to declare.

Financial Support: This work has not received any contribution grant or scholarship.

Provenance and Peer Review: Commissioned; without external peer reviewed.

Correspondence / Correspondência:

Ricardo Silva Veiga - rjlsv@hotmail.com

Serviço de Medicina Interna, Hospital de São Teotónio, Centro Hospitalar de Tondela-Viseu, Viseu, Portugal

Av. Rei D. Duarte, 3504-509 Viseu - Portugal

Recebido / Received: 2023/08/01

Aceite / Accepted: 2023/08/02

Publicado / Published: 2023/09/27

REFERENCES

1. Abu-Naeima E, Amin Abu-Sheaishaa Shalaby M, Rola P. VExUS na Gestão da Pericardite Constritiva: Relato de Caso. Med Interna. 2023 (in press) [citado 31 de Julho de 2023]. Disponível em: https://revista.spmi.pt/index.php/rpmi/article/view/2098
2. Beaubien-Souligny W, Rola P, Haycock K, Bouchard J, Lamarche Y, Spiegel R, et al. Quantifying systemic congestion with Point-Of-Care ultrasound: development of the venous excess ultrasound grading system. Ultrasound J. 2020;12:16. doi: 10.1186/s13089-020-00163-w.
3. Vazquez D, Arroja S, Guerreiro Cruz S, Fernandes Santos I, Tung Chen Y. Avaliação da Congestão Venosa por Ultrassonografia Point-of-Care: Estado da Arte. Med Interna. 2023;30:114-21. doi: 10.24950/rspmi.1966
4. Romero-González G, Manrique J, Castaño-Bilbao I, Slon-Roblero MF, Ronco C. PoCUS: Congestion and ultrasound two challenges for nephrology in the next decade. Nefrologia. 2022;42:501-5. doi: 10.1016/j.nefroe.2021.09.008.
5. Torres-Arrese M, Mata-Martínez A, Luordo-Tedesco D, García-Casasola G, Alonso-González R, Montero-Hernández E, et al. Usefulness of Systemic Venous Ultrasound Protocols in the Prognosis of Heart Failure Patients: Results from a Prospective Multicentric Study. J Clin Med. 2023;12:1281. doi: 10.3390/jcm12041281.