Lehigh Valley Health Network LVHN Scholarly Works

Department of Medicine

#### Management of Incidental Aortic Mural Thrombus in the Setting of Heparin-Induced Thrombocytopenia

Mal P. Homan DO Lehigh Valley Health Network, Mal.Homan@lvhn.org

Brian J. Holahan DO Lehigh Valley Health Network, Brian.Holahan@lvhn.org

Soorya N. Aggarwal DO Lehigh Valley Health Network, Soorya.Aggarwal@lvhn.org

Robert V. Decker MD Lehigh Valley Health Network, Robert.Decker@lvhn.org

Andres Zirlinger MD Lehigh Valley Health Network, Andres.Zirlinger@lvhn.org

Follow this and additional works at: https://scholarlyworks.lvhn.org/medicine

Part of the Internal Medicine Commons

#### Published In/Presented At

Homan, M. P., Holahan, B. J., Aggarwal, S. N., Decker, R. Zirlinger, A. (2019, October 21). *Management of Incidental Aortic Mural Thrombus in the Setting of Heparin-Induced Thrombocytopenia*. Poster Presented at: Chest Annual Meeting, New Orleans.

This Poster is brought to you for free and open access by LVHN Scholarly Works. It has been accepted for inclusion in LVHN Scholarly Works by an authorized administrator. For more information, please contact LibraryServices@lvhn.org.

# Management of Incidental Aortic Mural Thrombus in the Setting of Heparin-Induced Thrombocytopenia Mal P. Homan, DO, Brian J. Holahan, DO, Soorya N. Aggarwal, DO, Robert Decker, MD, Andres Zirlinger, MD

### **Case Presentation**

- 74-year-old female presenting with dyspnea after a recent ICU hospitalization for bronchospasm.
- Found to have saddle and bilateral segmental pulmonary emboli with concomitant DVT of the lower extremities.
- CT also demonstrated aortic mural thrombus (AMT) of the descending thoracic aorta (1.8 x 0.9 x 8.6cm) and the supra-renal abdominal aorta (0.8 x 0.6 x 3.0cm).
- Physical exam noted strong pulses in all limbs with signs of good perfusion.
- Platelet count was difficult to quantify due to clumping, even on EDTA. She was emergently started on argatroban with suspicion for HIT given subcutaneous heparin exposure on last hospital admission. HAPA resulted positive, as did the confirmatory SRA.
- The patient was discharged in stable condition on rivaroxaban, and platelet levels returned to normal.

Lehigh Valley Health Network, Allentown, Pa.

# Discussion

- While venous thromboembolic disease is more common in HIT, arterial thrombus formation can also occur, and its management is less defined. It is estimated that only 7-14% of HIT patients have arterial thrombi, compared to 55% having venous thrombi.<sup>6</sup>
- AMT is a rare condition with potentially severe embolic consequences and no clear consensus on management.<sup>2-4,9,15,16</sup>
- AMT in an aorta without apparent structural disease is even more unusual.<sup>1,3-6</sup>
- These arterial thrombi are more likely to form in atherosclerotic arterioles rather than large arteries<sup>6</sup>, making this case more unique.
- Upon extensive literature search, we found 6 case reports of AMT resulting from HIT in a structurally normal aorta without preceding surgery or intravascular trauma.6,10-14





Abdominal AMT in Axial View



## Conclusion

 Thrombi from HIT can form in the arterial circulation, and a clinical suspicion for HIT must be present when investigating the origin of a new thrombus.

 Currently, there are no clear guidelines on the management of AMT in HIT and further investigation is needed.



#### References

Alaeddini J, llercil A, Shirani J. Thoraco-abdominal aortic thrombosis and superior mesenteric artery embolism. *Tex Heart Inst J.* 2000;27(3):318-9.

<sup>2</sup>Hiratzka LF, Bakris GL, Beckman JA, et al. 2010 ACCF/AHA/AATS/ACR/ASA/SCA/SCAI/ SIR/STS/SVM Guidelines for the diagnosis and management of patients with thoracic aortic disease. *Circulation*. 2010;121:e266–e369

<sup>3</sup>Fayad, Ziad Y. et al. Aortic Mural Thrombus in the Normal or Minimally Atherosclerotic Aorta. Annals of Vascular Surgery. 2012;27(3):282–290.

<sup>4</sup>Chatterjee S, Eagle SS, Adler DH, et al. Incidental discovery of an ascending aortic thrombosis: should this patient undergo surgical intervention? The Journal of Thoracic and Cardiovascular Surgery. 2010;140(1):e14.

<sup>5</sup>Moris D, Karaolanis G, Schizas D, et al. eComment. Mural thrombus in normal appearing aorta: Unfinished saga in uncharted waters. Interact Cardiovasc Thorac Surg. 2016;22(3):373-4.

<sup>6</sup>Bienz MJ, Obrocki P, et al. Heparin-induced thrombocytopaenia presenting as acute aortic mural thrombosis. *The British Institute of Radiology.* 2018;5(1).

<sup>7</sup>Kabach A, Qurie A, Selim M. Treatment of symptomatic aortic thrombus with thoracic endovascular aortic repair. Journal of the American College of Cardiology. Mar 2018, 71 (11 Supplement) A2177; DOI: 10.1016/S0735-1097(18)32718-9

<sup>8</sup>Bowdish, Michael E. et al. Anticoagulation is an effective treatment for aortic mural thrombi. Journal of Vascular Surgery. 2002. 36(4):713 – 719.

<sup>9</sup>Hassan I, Zehr K, Freeman WK. A Case of Asymptomatic Aortic Thoracic Aorta Mural Thrombi. Ann Thorac Surg. 2001;72:1735-7.

<sup>10</sup>Chevalier J, Ducasse E, et al. Heparin-induced Thrombocytopenia with Acute Aortic and Renal Thrombosis in a Patient Treated with Low-molecular-weight Heparin. Eur J Vasc *Endovasc Surg.* 2005 Feb;29(2):209-12.

<sup>11</sup>Karkos CD, Mandala E, et al. Endovascular management of acute infrarenal aortic thrombus caused by heparin-induced thrombocytopenia in a patient treated with low molecular weight heparin. J Vasc Interv Radiol. 2011 Apr;22(4):581-2. doi: 10.1016/j. jvir.2010.11.006. Epub 2011 Feb 3.

<sup>12</sup>Kruger T, Liske B, et al. Thrombolysis to treat thrombi of the aortic arch. *Clin Appl Thromb* Hemost. 2011 Aug;17(4):340-5. doi: 10.1177/1076029610364519. Epub 2010 May 11. <sup>13</sup>Klemp U, Bisler H. Case report: acute infrarenal aortic occlusion and leg vein thrombosis in heparin-induced thrombocytopenia. Vasa Suppl. 1991;33:289-90.

<sup>14</sup>Meagher AP, Lord RS, et al. Acute aortic occlusion presenting with lower limb paralysis. J Cardiovasc Surg (Torino). 1991 Sep-Oct; 32(5):643-7.

<sup>15</sup>Karaolanis G, Moris D, Bakoyiannis C, et al. A critical reappraisal of the treatment modalities of normal appearing thoracic aorta mural thrombi. Ann Transl Med. 2017;5(15):306.

<sup>16</sup>Choukroun, E.M. et al. Mobile Thrombus of the Thoracic Aorta: Diagnosis and Treatment in 9 Cases. Annals of Vascular Surgery. 2002;16(6):714-722

Lehigh Valley Health Network

