

Role of intravascular ultrasound imaging in detection of acute aortic syndrome

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In the current issue of *Cardiovascular Innovations and Applications*, Niya Mileva, Medical University of Sofia, Sofia, Bulgaria and other researchers from Poland and Italy present a case study of misdiagnosed aortic intramural hematoma and the role of intravascular ultrasound imaging in detection of acute aortic syndrome.

Acute aortic syndrome includes classic aortic dissection, aortic intramural hematoma, and penetrating atherosclerotic ulcer - a group of conditions that are defined by their dynamic evolution and similar clinical manifestation. Accurate [diagnosis](#) and prompt treatment are essential as all the aforementioned conditions are a significant threat to a patient's life. However, acute aortic syndrome and especially aortic intramural hematoma may be challenging diagnostic problems. Intravascular ultrasound imaging is a diagnostic method that can be useful for more thorough evaluation of the aortic lesion and can particularly aid in discerning the different forms of acute aortic syndrome. We present a case of a patient with aortic intramural hematoma that was missed by conventional imaging studies but was successfully visualized with intravascular ultrasound imaging.

Acute aortic syndrome (AAS) is a term that refers to the acute presentation of potentially life-threatening abnormalities of the aorta, including classic aortic dissection, aortic intramural [hematoma](#) (AIH), and penetrating atherosclerotic ulcer (PAU). These diseases may present with a variety of symptoms and mimic other conditions, such as [acute coronary syndrome](#), pulmonary embolism, and pericarditis. However, the

diagnosis of AAS has many potential difficulties. Because of the similar clinical manifestations, there is a high risk of misdiagnosis. The most commonly used imaging studies include transthoracic echocardiography, transesophageal echocardiography, and contrast-enhanced computed tomography (CT). Although conventional non-invasive imaging techniques have high sensitivity and specificity in the diagnosis of AAS, they still have some limitations in differentiating the particular forms of AAS. A case example is presented in which intravascular ultrasound (IVUS) imaging could be useful in this aspect.

In addition to classic aortic dissection and PAU, AIH is one of the causes of AAS. These [conditions](#) can be identical in their clinical manifestation, but they have important differences in diagnosis and management. The case presented draws attention to the importance of clinical suspicion of AAS, with its particular forms, the value of using more than one imaging method, and the benefits of IVUS imaging in the prompt diagnosis of this condition, which is essential to saving the life of patients.

More information: Niya Mileva et al, Misdiagnosed Aortic Intramural Hematoma and the Role of Intravascular Ultrasound Imaging in Detection of Acute Aortic Syndrome: A Case Report, *Cardiovascular Innovations and Applications* (2017). [DOI: 10.15212/CVIA.2017.0028](https://doi.org/10.15212/CVIA.2017.0028)

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