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Intimal disruption in type B aortic intramural hematoma. Does size matter? A systematic review and meta-analysis

Authors:
P Vilardell¹, S Moral¹, E Ballesteros², JM Frigola¹, M Morales¹, X Albert¹, R Brugada¹, A Evangelista³,
¹University Hospital de Girona Dr. Josep Trueta, Cardiology - Girona - Spain, ²Institut Catala de la Salut, Radiology department. CAP Pare Claret - Barcelona - Spain, ³University Hospital Vall d'Hebron, Cardiology - Barcelona - Spain,

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Background

Type B intramural hematoma (IMH) is considered a low-risk entity for aortic complications if aortic dilation, contained rupture or clinical instability are absent. However, the development of intimal disruptions (ID) present in more than 40% of cases supposes an unknown risk.

Objectives

To establish which ID characteristics imply a higher risk of aortic complications and, therefore, merit invasive treatment.

Methods

A systematic review and a meta-analysis were made following a search in EMBASE, MEDLINE and PsycINFO for articles published between January 1995 and December 2017. The combined endpoint was defined as aortic mortality, invasive treatment for aortic disease and/or increase in maximum aortic diameter =55mm. Lesions with communicating orifice =3mm were defined as tiny ID (TID) and those with >3mm as focal ID (FID).

Results

Six studies with 564 participants diagnosed of type B IMH were included. Incidence of ID was 54.3% (306 individuals): 27.7% (156 individuals) initially met TID criteria; however, 13.9% of these (21 of 151 with morphological evolution) evolved to FID within the first 6 months (Figure 1). Ninety-two cases suffered clinical aorta-related events (16.3%; mean follow-up range: 15-85 months). Patients with TID had a similar risk of aorta-related events to those without ID (RR=0.904; 95%CI,0.335-2.440; P=0.842; I²=42.5%), but lower than those with FID (RR=0.299; 95%CI,0.094-0.952; P=0.041; I²=26.9%).

Conclusions

Tiny intimal disruption in type B IMH evolution is not related to an increased risk of complications and should not be considered an indication for invasive treatment. However, since 13.9% of TID evolve to FID within the first 6 months, close follow-up with imaging techniques is advisable.

Figure 1. Different evolutions of TID in type B IMH, showing percentages of cases which disappear, decrease or remain stable (86.1%) versus those which increase in size (13.9%) based on our analysis.
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1 University Hospital de Girona Dr. Josep Trueta, Cardiology - Girona - Spain,
2 Institut Catala de la Salut, Radiology department. CAP Pare Claret - Barcelona - Spain,
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