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Pathology of Pulmonary Vein Isolation in a Patient With Transthyretin-Related Amyloidosis

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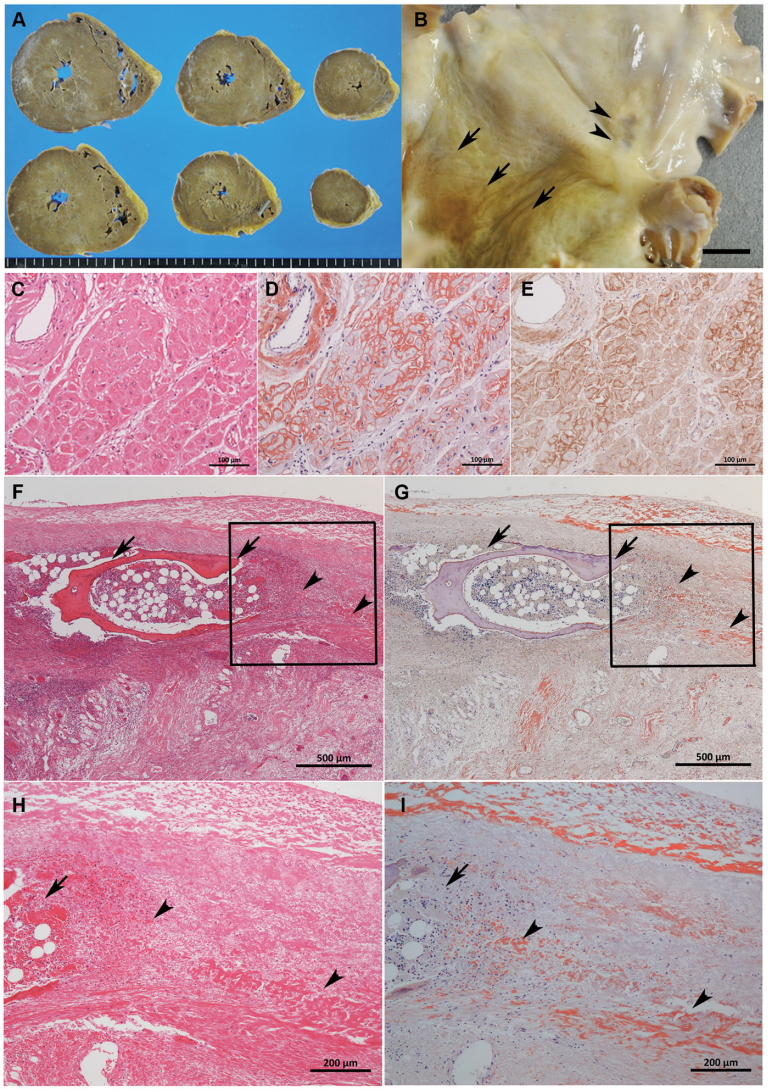

Figure. (**A**) Transverse sections of the heart. (**B**) Endocardium of the left atrium. Arrows indicate amyloid deposition and arrowheads indicate the pulmonary vein isolation (PVI) scar. Scale bar, 1 cm. (**C**–**E**) Transthyretin-related amyloid deposition in the septum of left ventricle: hematoxylin-eosin (HE) staining (**C**); Direct Fast Scarlet staining (**D**); and ATTR immunohistochemistry (**E**). (**F**–**I**) PVI scar exhibiting osseous metaplasia (arrows; HE [**F**] and Direct Fast Scarlet [**G**] staining) adjacent to the amyloid deposition (arrowheads). (**H**,**I**) Higher-magnification images of the boxes in (**F**) and (**G**), respectively.

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An 82-year-old man was admitted to Nihon University Itabashi Hospital due to congestive heart failure. He had a history of pulmonary vein isolation (PVI) for paroxysmal atrial fibrillation and permanent pacemaker implantation for atrioventricular block 2 and 7 years ago, respectively. The patient died of ischemic colitis 59 days after being hospitalized, and an autopsy was performed.

Gross examination revealed biventricular hypertrophy with a tan and rubbery myocardium in the short-axis sections (**Figure A**). Coarse endocardium of the left atrium and PVI scars were identified (**Figure B**). Systemic transthyretin-related amyloidosis in the heart, lung, liver, spleen, digestive tract, kidney, thyroid gland, and urinary bladder was confirmed by Direct Fast Scarlet (**Figure C**,**D**) and immunohistochemistry (**Figure E**). The PVI scar exhibited osseous metaplasia with bone marrow formation (**Figure F**,**G**), adjacent to amyloid deposition (**Figure F**–**I**).

The presence of osseous metaplasia has been reported in patients with amyloidosis in organs other than the heart, such as lung, breast and tongue.[1–3] However, such metaplasia has not been reported previously in PVI scars. This report demonstrates a rare case of metaplastic change in the PVI scar in a patient with systemic amyloidosis.

Disclosures

The authors have no conflicts of interest to declare.

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