

Winking object inside heart: Abrupt deflation and reinflation of cryoballoon during atrial fibrillation ablation

Kalp içerisinde göz kırpan cisim: Atriyum fibrilyasyonu ablasyonu esnasında kriyobalonun ani sönmesi ve geri şişmesi

Uğur Canpolat

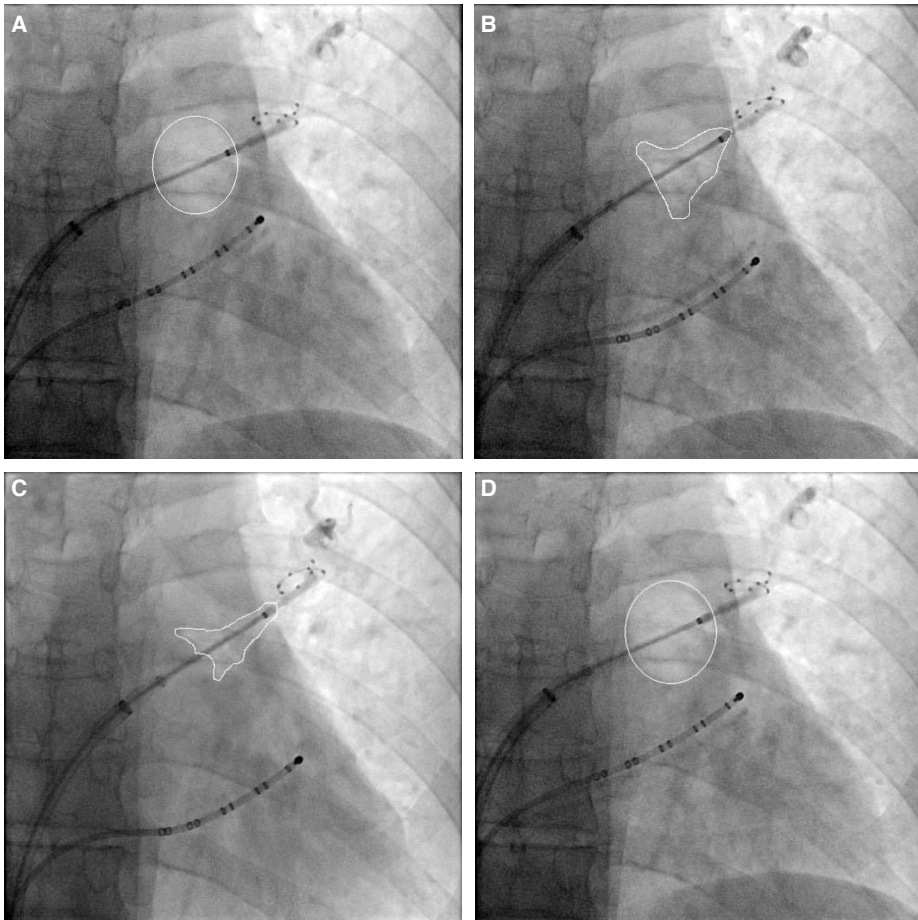
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A 52-year-old woman with a diagnosis of arterial hypertension underwent cryoballoon-based pulmonary vein isolation (PVI) for symptomatic paroxysmal atrial fibrillation. A second-generation, 28-mm cryoballoon catheter (CB2) (Arctic Front Advance; Medtronic, Inc., Minneapolis, MN, USA) was used during the ablation procedure. Using the standard approach, the procedure was initiated with isolation of the left superior PV (LSPV). The CB2 was positioned at the LSPV ostium appropriately, using a steerable sheath and an Achieve circular mapping catheter (Medtronic, Inc., Minneapolis, MN, USA). Once freezing had been

initiated, the catheter was pulled back to the LSPV ostium to record real-time PV potentials before achieving negative temperatures. Although the CB2 temperature was dropping at a regular rate, spontaneous, sudden-onset deflation and normalization (3 consecutive episodes) of the balloon was observed on the fluoroscopic images without any error message or termination of the gas injection (Figure A-D, Video 1*). However, no abnormality in temperature curve, gas flow, or pressure inside the cryoballoon catheter was seen. Furthermore, the potential influence of the respiratory cycle on the deflation process was also excluded based on the fluoroscopic record. Therefore, we decided to continue the ablation procedure and completed the PVI successfully and without further event. The cryoballoon catheter was sent to the manufacturer to examine for possible defects. The manufacturer reported no abnormal finding, and they concluded that such an abnormality might have occurred due to an error during the cycling of nitrous oxide gas. As a suggestion, operators should consider monitoring the balloon shape via fluoroscopy until negative temperatures have been reached. Reports of this type of case may help the electrophysiology community resolve such technical defects more easily and prevent harm to our patients.



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Figures– Fluoroscopy images demonstrating (A) normal positioning of the cryoballoon catheter at the ostium of the left superior pulmonary vein, (B, C) sudden-onset deflation of the cryoballoon, and (D) spontaneous normalization.

*Supplementary video files associated with this presentation can be found in the online version of the journal.