A case report: Protection of the air embolism during PVI for atrial fibrillation patient with severe OSAS

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Introduction: This case is a 59-year-old male. His comorbidities were metabolic syndrome. Common atrial flutter was pointed out 3 years ago, so RFCA (cavo tricuspid isthmus line) was undergone at March in 2015, and at the same time atrial fibrillation (AFB) was pointed out for the first time. His AFB was drug-resistant and symptomatic, so pulmonary vein isolation (PVI) was undergone at October in 2015. During PVI, he received infusion of Dexmedetomidine for sedation and was under respiratory control by Adaptive Salvo Ventilation (ASV). He was overweight (BMI: 30.1), had obstructive sleep apnea syndrome (AHI: 44/hr), but didn’t receive any treatment for OSAS. After induction of anesthesia by Dexmedetomidine, we made transseptal approach from right atrium by BrockenBrough procedure as usual.

Result: When we inserted ring-shaped catheter to left atrium and pulled it out from the long sheath Agilis® in the direction of LSPV, vital sign suddenly and remarkably changed with a deep breath; ST segment of ECG in inferior leads was elevated, heart rate went brady, and BP dropped into below 50mmHg. Then emergency CAG was performed right away with RV pacing, air embolism inside RCA was found. All the air inside the RCA could be sucked with coronary catheter (JR, 5Fr) by negative pressure several times, and coronary flow was fortunately improved to TIMI 3. Afterward sequelae of cerebral or myocardial infarction didn’t occur at all. At a later day conventional PVI could be safely performed under general anesthesia with intratracheal intubation by using inhalation anesthesia (Sevoflurane) and muscle relaxant (Vecuronium-bromide).

Conclusion: Although cardiac tamponade or cerebral infarction as complication during PVI is well known, we’d like report this rare case of coronary occlusion by air embolism and workaround against this complication for AFB patients with SAS.