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Pediatric Pulmonary Artery Aneurysms causing Pulmonary Hemorrhage: A Case of Transcatheter Intervention while on VA ECMO Support

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Pediatric Pulmonary Artery Aneurysms causing Pulmonary Hemorrhage: A Case of Transcatheter Intervention while on VA ECMO Support

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IRB Number: N/A

Describe role of Submitting/Presenting Trainee in this project (limit 150 words):

The presenting author for this case report collected the data and wrote the case. In addition, he performed part of the data search and analysis. He also was responsible for writing the abstract for this submission.

Background, Objectives/Goal, Methods/Design, Results, Conclusions limited to 500 words

Background:

The incidence of pulmonary artery aneurysm (PAA) in children remains unknown. There are few reports of a transcatheter interventional approach to address this type of pathology. Management of PAAs while on VA ECMO has not been described in pediatrics.

Objectives/Goal:

Methods/Design:

Case:

9-year-old previously healthy male presented with MRSA associated ARDS and sepsis requiring urgent VA ECMO cannulation. Chest CT done on ECMO day 22 showed development of right sided PAAs. Patient had an episode of significant pulmonary hemorrhage. Angiogram demonstrated two fusiform right PAAs, one of which had ruptured and was bleeding into the lung parenchyma. Patient had successful occlusion of the aneurysms with Amplatzer devices in the catheterization lab while on VA ECMO support. The procedure was complicated by flail tricuspid valve. Patient tolerated this

complication and the procedure went well with no further hemorrhagic events. He decannulated from ECMO and was discharged from the PICU neurologically intact and subsequently discharged from the hospital in room air.

Conclusions:

Our report demonstrates the feasibility of a percutaneous interventional procedure to address life-threatening PAAs while on VA ECMO. While there was concern for devices becoming infected and for cessation of pulmonary blood flow to the right lower lobe, these risks were deemed acceptable in the face of a life-threatening hemorrhage. Vascular occlusion devices can be considered an approach for pediatric patients with this rare complication and coils or other vascular occlusion devices could be used in smaller lesions. Successful management of these complex patients requires a well-organized multidisciplinary approach.