

DR. JIN PARK, MD

Northside Hospital | Atlanta, GA

Restoration of Hemodynamics Following EKOS® Therapy in Bilateral PE with Saddle Embolus: Immediate Results and 6-month Follow-up

Patient History

A 44-year-old previously healthy female presented to the ED with complaints of progressive shortness of breath and chest discomfort.

- Patient reported having severe dyspnea with minimal walking at home
- No prior history of venous thromboembolism, with oral contraceptive use considered as the only risk factor
- No syncopal episodes; BP and HR normal on admission
- CT angiography demonstrated bilateral PE with saddle embolus and thrombus extending into most lobar and segmental branches (Fig. 1)
- CT evidence of right ventricular strain with RV/LV ratio > 1
- Echocardiography showed dilated right ventricle with RV overload

Treatment

Patient was admitted to the ICU, and weight-based UFH protocol for PE initiated. On hospital day 1, patient was brought to the Interventional Radiology suite for Acoustic Pulse Thrombolysis™ with EKOS®

- Selective pulmonary arteriography showed:
 - obstructive thrombus in the right interlobar artery with no flow into the basal trunk and a right PASP of 60 mmHg (Fig. 2A)
 - Partial obstruction in the left interlobar artery and segmental branches with a left PASP of 58 mmHg (Fig. 2B)
- The patient underwent Acoustic Pulse Thrombolysis™ using:
 - 10 mg rt-PA bolus infusion
 - a 6 cm EkoSonic® device placed in the right PA thrombus
 - a 12 cm EkoSonic® device in the left PA thrombus
 - Bilateral rt-PA infusion of 0.5 mg/hr/catheter for 24 hours (total dose of 34 mg including initial bolus)
- Weight-based UFH protocol was maintained during thrombolysis

Results

- Repeat pulmonary arteriography showed restored flow into the right interlobar artery with near complete thrombolysis (Fig. 2C)
- Left pulmonary interlobar artery also demonstrated near complete lysis with minimal nonocclusive residual thrombus (Fig. 2D)
- The patient's dyspnea resolved and she no longer required supplemental oxygen
- Repeat echocardiography obtained on day 3 revealed normal right ventricle size and function
- Six month follow-up CT pulmonary arteriography showed no residual thrombus and normal RV/LV ratio (Fig. 3)

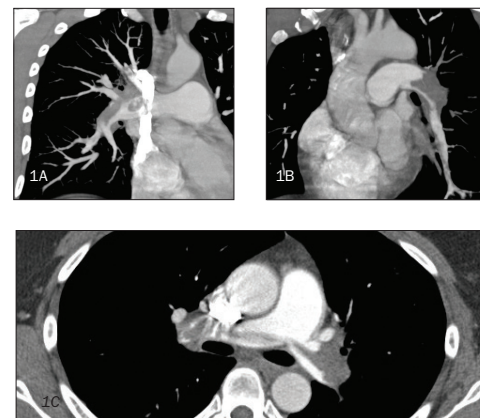


Figure 1. Pre-treatment CT angiography showed (A) thrombus in the right interlobar PA, (B) thrombus in the left PA, and (C) saddle embolus.

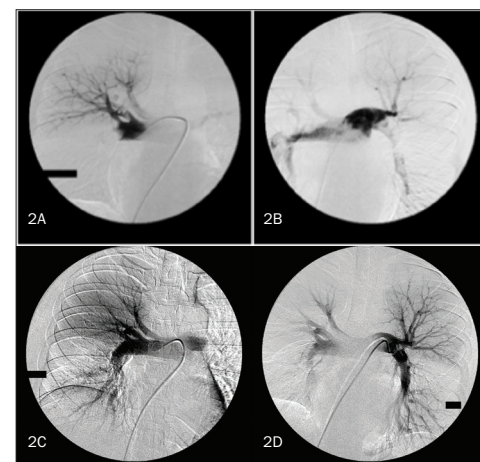


Figure 2. Pulmonary arteriography confirmed occlusive thrombus in the (A) right and (B) left PA. Immediately following EKOS® therapy, thrombus was cleared and flow restored in both the (C) right and (D) left PA.

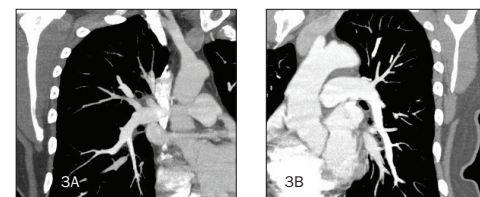


Figure 3. Follow-up CT angiography at 6 months demonstrated normal (A) right and (B) left PA with no evidence of thrombus.



FDA CLEARED INDICATIONS: The EkoSonic® Endovascular System is indicated for the ultrasound facilitated, controlled and selective infusion of physician-specified fluids, including thrombolytics, into the vasculature for the treatment of pulmonary embolism; the controlled and selective infusion of physician-specified fluids, including thrombolytics, into the peripheral vasculature; and the infusion of solutions into the pulmonary arteries. Instructions for Use, including warnings, precautions, potential complications, and contraindications can be found at www.ekoscorp.com. Caution: Federal (USA) law restricts these devices to sale by or on the order of a physician. EKOS® and EkoSonic® are registered trademarks of EKOS Corporation, a BTG International group company. BTG and the BTG roundel logo are registered trademarks of BTG International Ltd. © 2014 EKOS Corporation • US-EKO-2014-1007

EKOS CORPORATION
11911 N Creek Pkwy S.
Bothell, WA 98011