

Successful Percutaneous Catheter-Directed Thrombolysis of Intermediate-high risk Acute Pulmonary Embolism in a Patient with Colorectal Mass with Major Bleeding Risk: A Case Report

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INTRODUCTION

Pulmonary embolism (PE) is a life-threatening condition and is a leading cause of morbidity and mortality. There have been many advances as well as emerging challenges in the management of PE requiring a assessment of their impacts in patient outcomes. However, variations in recommendations by different clinical guidelines, as well as lack of robust clinical trials, make clinical decisions challenging. Nowadays several percutaneous catheter-directed treatments for local thrombolysis or mechanical embolectomy are available, but they have IIa class of recommendation, because of lack of robust scientific evidence favoring their use.

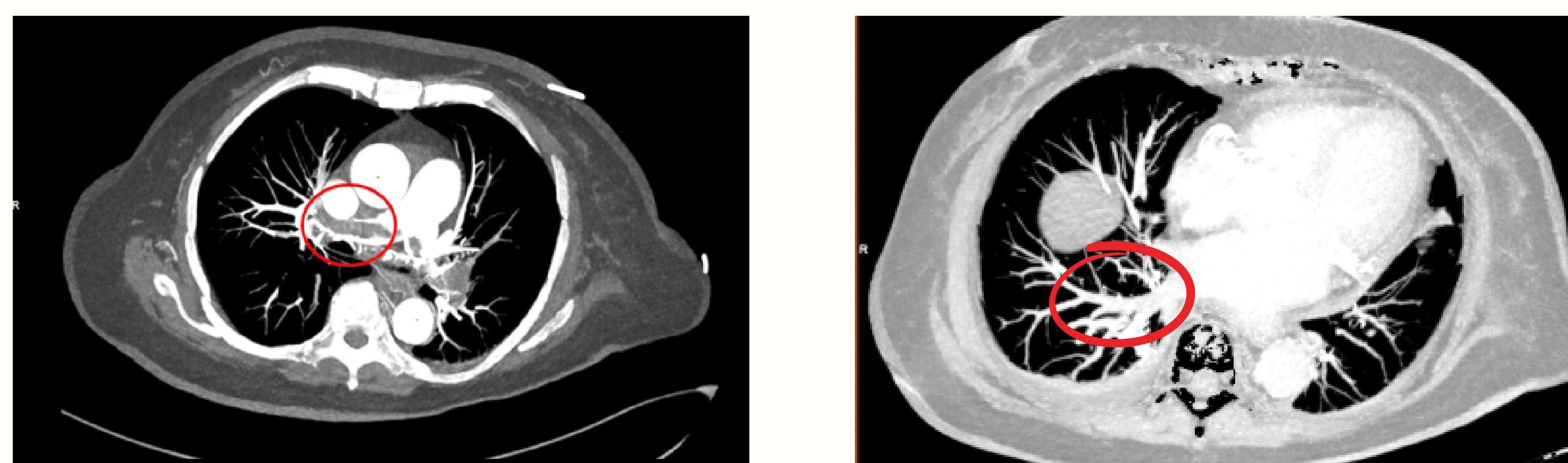


Figure 1. The initial CTPA (left) showing a large intraluminal filling defect involving the main pulmonary artery and its bifurcation extending to the right and left main pulmonary arteries until the distal branches; and the subsequent CTPA (right) after CDT showing decrease in the size of the main pulmonary artery embolus as well as in the extensions to the right and left main pulmonary arteries and their respective distal branches.

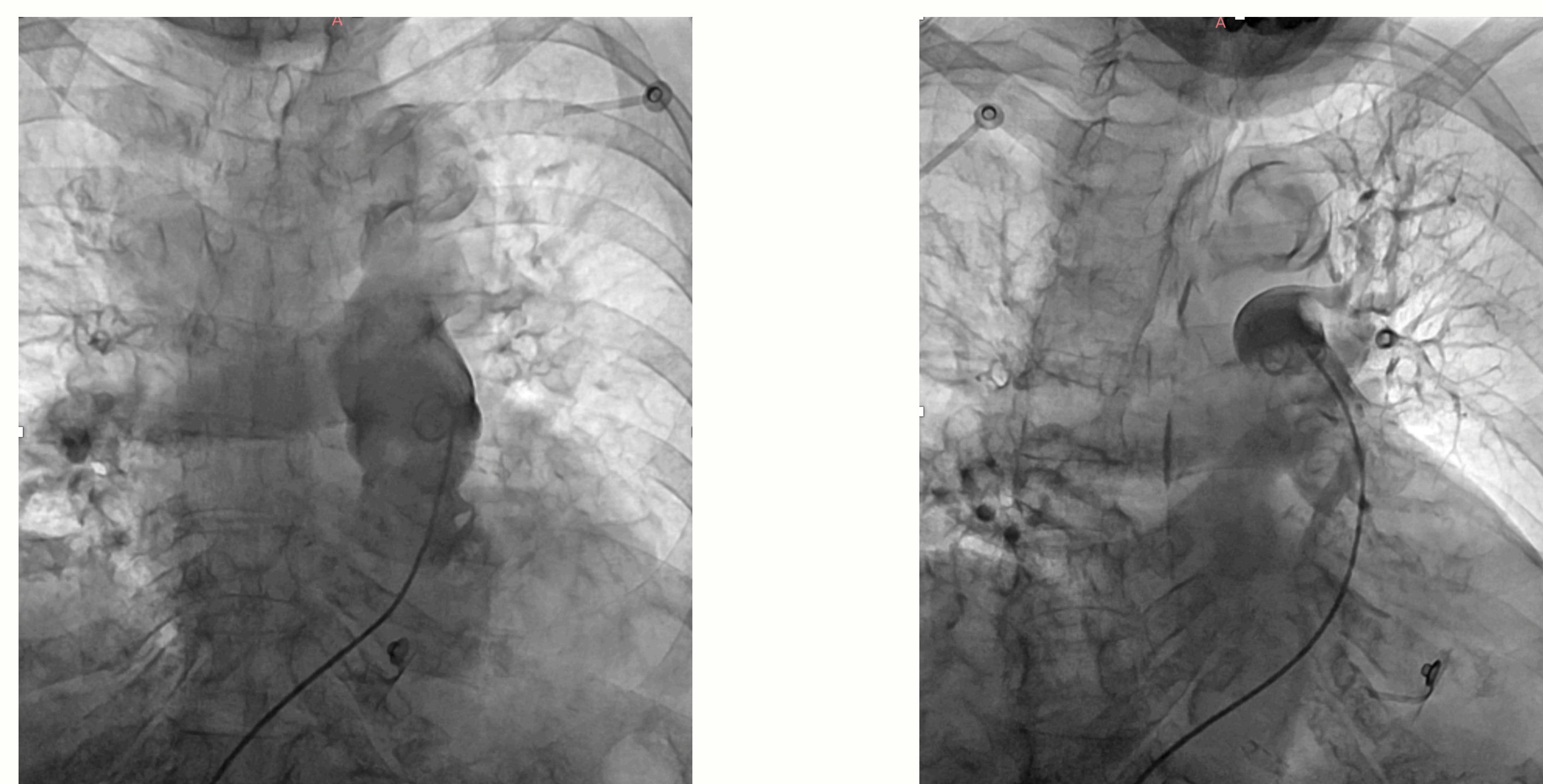


Figure 2. Catheter-Directed Thrombolysis (CDT) procedure showing the initial fluoroscopy (left) showing poor uptake of constast media to the left main pulmonary artery and its distal branches compared to the fluoroscopy (right) after the catheter was positioned at the left pulmonary artery and infusing Alteplase 10mg as bolus.

CASE DESCRIPTION

We described a case of an 88-year old female, with history of gastrointestinal bleeding secondary to gastric ulcer and recently diagnosed to have rectal adenocarcinoma who came in because of dyspnea and was managed initially as a case of intermediate-high-risk PE. 2D Echocardiogram revealed a dilated right ventricular size with hypokinetic free wall and systolic dysfunction. CT Pulmonary angiogram revealed a large intraluminal filling defect involving the main pulmonary artery and its bifurcation extending to the right and left main pulmonary arteries up to the distal branches. Given the patient's major bleeding risk and the risk worsening PE, catheter-directed thrombolysis (CDT) was done and the patient was given a reduced dose of Recombinant Tissue-type Plasminogen Activator (rtPA) 10mg bolus followed by 1mg/hr infusion for 24 hours. No major bleeding was noted during or immediately-post procedure. A subsequent repeat 2D echocardiogram revealed improvement in the right ventricular wall motion and systolic function with an RVFAC from 33% to 52%, and a decreased pulmonary artery pressure from 41 to 25mmHg. Subsequent repeat pulmonary angiogram showed no evidence of a filling defect, with full opacification of the lobar arteries; no more evidence of saddle embolus. The patient was eventually discharged improved.

CONCLUSION

Percutaneous catheter-directed treatments including catheter-directed thrombolysis represent an effective alternative therapy for PE, but further studies are needed to demonstrate safety and superiority over the actually recommended therapy.

DISCLOSURE

none

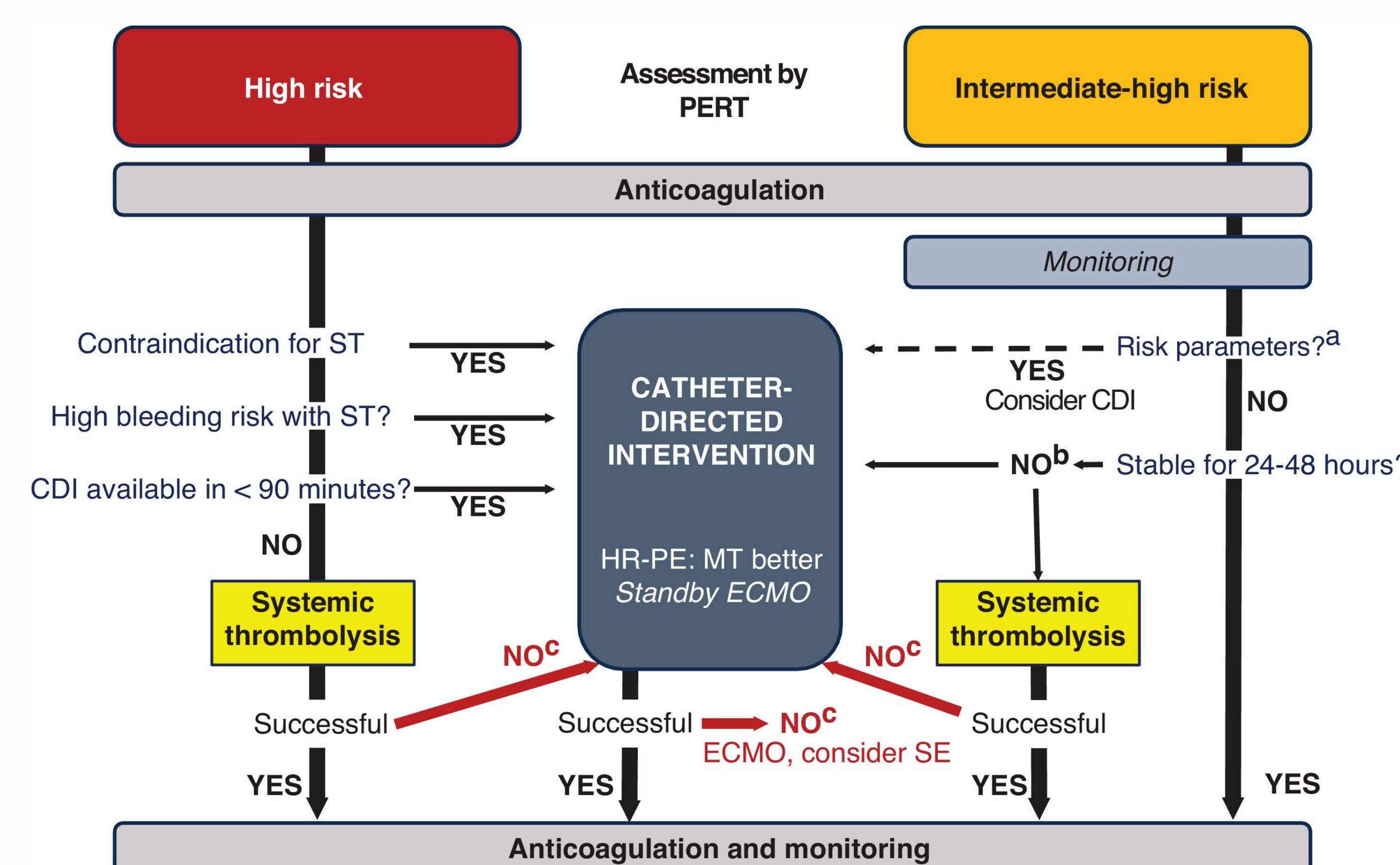


Figure 3. Management algorithm for pulmonary embolism according to expert consensus. CDI, catheter-directed intervention; ECMO, extracorporeal membrane oxygenation; HR-PE, high-risk pulmonary embolism; MT, mechanical thrombectomy; PERT, pulmonary embolism response team; SE, surgical embolectomy; ST, systemic thrombolysis. (Foley, S. P. F., & Parrish, J. S. (2023). Pleural space infections. *Life*, 13(2), 376. <https://doi.org/10.3390/life13020376>)