

# Massive Bilateral Pulmonary Emboli Complicating Coronary Artery Bypass Grafting: A Case Report

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## ABSTRACT

We report an unusual case of massive bilateral pulmonary emboli following single coronary artery bypass grafting on cardiopulmonary bypass. The patient was admitted electively, received deep vein thrombosis prophylaxis, and had no clinical evidence of deep vein thrombosis in the perioperative period. On the tenth postoperative day he developed sudden dyspnea and a diagnosis of pulmonary embolus was made with computed tomography. Despite full anticoagulation he continued to deteriorate, and despite attempts at pulmonary embolectomy he died of right-sided heart failure. Post-mortem confirmed the diagnosis, but there was no evidence of thrombi in the pelvic and leg veins.

## INTRODUCTION

Pulmonary embolism is a rare complication in patients undergoing coronary artery bypass grafting. The diagnosis of pulmonary embolus is often missed after coronary artery surgery because hypoxia is frequently present in the early postoperative period and ascribed to basal atelectasis. In the authors' series, all patients receive deep vein thrombosis (DVT) prophylaxis, and it is unusual that massive bilateral pulmonary emboli developed in this case without any of the risk factors.

## CASE REPORT

A 70-year-old man was admitted electively for coronary artery bypass surgery due to chronic stable angina. Preoperative tests to evaluate hematologic and hemostatic status all yielded normal results. He underwent coronary artery bypass grafting (left internal mammary artery to left anterior descending artery) on cardiopulmonary bypass. His immediate postoperative recovery was uneventful and he had DVT prophylaxis

with subcutaneous fragmin and TED stockings. On the 10th postoperative day, he suddenly became breathless and his oxygen saturation dropped to under 76% on air. The diagnosis of bilateral pulmonary emboli was made and confirmed on spiral computed tomography. No origin in the veins was found in an ultrasound of the legs. Despite full anticoagulation his respiratory distress worsened, necessitating mechanical ventilation. The platelet count remained within normal limits throughout. He deteriorated further with rising right atrial pressures and was referred for open pulmonary embolectomy. At operation, a few clots were removed from each pulmonary artery, but right-sided heart failure persisted and he died the same evening. Postmortem confirmed multiple recent pulmonary emboli occluding most of the pulmonary arteries bilaterally (Figures 1 and 2). Examination of the pelvic and leg veins revealed no evidence of thrombi.

## DISCUSSION

Pulmonary embolism is a rare complication in patients undergoing coronary artery bypass grafting, but bilateral pulmonary emboli has not been described before. The reported incidence is less than 0.56% and has a mortality of 34% [Ralph-Edwards 1994]. The diagnosis of pulmonary embolus is not entertained after coronary artery surgery because of

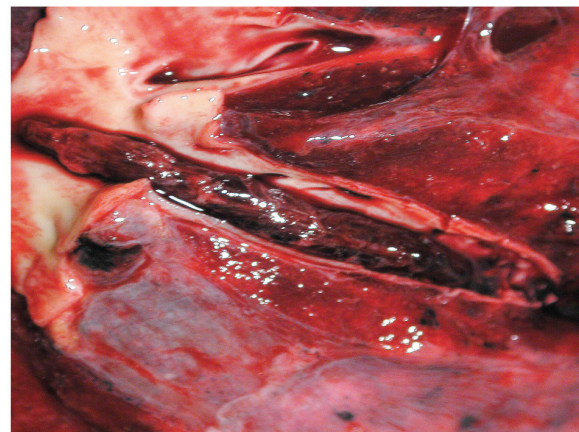


Figure 1. Thrombus in the left upper lobe artery.

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Figure 2. Thrombus in the right lower lobe artery.

preconceived ideas about the low risk and because hypoxia is frequently present in the early postoperative period. Factors that may predispose patients undergoing coronary artery bypass grafting to pulmonary embolism include restriction of activity because of unstable angina, recent myocardial infarcts (deep vein thrombosis was found in 10% to 38% of patients who had myocardial infarction [Briffa 1996]), smoking, age, extensive wounds in the legs restricting limb activity, and heparin-induced thrombocytopenia. None of these factors were present in this case, and the origin of the thromboembolism remains unclear.

#### REFERENCES

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