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Purpose: Pulmonary embolism (PE) usually manifests more than 48 hours following surgery and presents as dyspnoea, tachypnea, pleuritic chest pain, circulatory collapse and oxygen desaturation. The purpose of the current report is to describe an atypical case of pulmonary embolism following total knee arthroplasty (TKA) under spinal anesthesia.

Clinical Features: Institutional ethics approval and patient consent were obtained for presentation of this case. A 73 year old female was administered spinal anesthesia with bupivacaine prior to undergoing TKA. The intraoperative course and the first postoperative night were unremarkable. On postoperative day 1, the patient had several syncopal episodes requiring O2 therapy. A cardiology consult and bedside echocardiogram revealed pulmonary hypertension > 60 mmHg. Spiral CT confirmed bilateral pulmonary emboli with moderate clot load in both left and right ascending pulmonary arteries and most areas of both lungs. The main pulmonary artery was of normal size, the right atrium and right ventricle were dilated and compatible with pulmonary hypertension. Treatment with intravenous heparin was initiated along with subcutaneous Dalteparin (15,000 IU for one week). This was followed by Warfarin for 3 months to maintain INR measures at 2-3.

Conclusion: PE has been reported previously following total joint arthroplasty. PE requires rapid investigation, diagnosis and treatment with heparin followed by warfarin upon discharge. Prophylactic treatment for PE in TKA remains controversial. A joint registry evaluated venous thromboembolism prophylaxis and type of anesthesia on the overall incidence of PE, fatal PE and mortality. Patients received mechanical prophylaxis alone or in combination with chemical prophylaxis. The incidence of overall PE was 0.45%; fatal PE, 0.01%; and death, 0.31%. The only significant observation was a reduced incidence of PE when Coumadin was combined with mechanical prophylaxis. Other chemical prophylaxes imparted no benefit over mechanical prophylaxis alone. Variables associated with a higher incidence of PE were age, ASA >3 and the use of general anesthesia. Taken together, these results suggest that general anesthesia should be discouraged in patients at increased risk for PE and perioperative anticoagulation therapy be considered. One possible prophylactic treatment may be subcutaneous Heparin (5,000 IU) and mechanical DVT prophylaxis similar to that used in some abdominal and pelvic surgical cases. To our knowledge, this is the first case of pulmonary embolism reported on the first postoperative day following TKA.