Although the overall pulmonary artery catheter (PAC) use has decreased, it remains a valuable tool in select patients. PAC insertion may result in ventricular or supraventricular dysrhythmias due to contact of the catheter with the cardiac chamber walls. The use of balloon-tipped catheters during insertion serves to increase the catheter tip surface area, thereby mitigating applied pressure (and potential injury) should the catheter tip contact endocardium. The right bundle branch is located superficially in the endocardium of the right ventricle and is susceptible to trauma. Transient right bundle branch block may result and has been reported in 0 to 12% of patients undergoing right heart catheterization. In patients with preexisting left bundle branch block, iatrogenic right bundle branch block with PAC placement results in complete heart block. As noted in figure A and B, complete heart block may present as regular p waves with ventricular asystole and cardiac arrest (fig. A).

Although typically transient, complete heart block occurring during PAC placement can cause hemodynamic instability warranting immediate treatment. Prompt removal of the PAC may result in resolution of the complete heart block and hemodynamic stability (fig. B, total duration of ventricular asystole 10 s). Advanced cardiac life support and pacing should be provided as indicated. Previously, prophylactic temporary transvenous pacemaker placement was recommended in left bundle branch block patients undergoing PAC placement, but concerns of risks outweighing benefits of this approach have caused it to fall out of favor.

Competing Interests
The authors declare no competing interests.

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References

Charles D. Collard, M.D., Editor
Alan Jay Schwartz, M.D., M.S. Ed., Associate Editor

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David W. Barbara, M.D., Roger D. White, M.D.