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LETTER TO THE EDITOR

New-onset left bundle branch block immediately following noncardiac surgery under combined general and epidural anesthesia

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To the Editor:

Management of new-onset left bundle branch block (LBBB) in the perioperative period, particularly in a patient with thoracic epidural analgesia, is challenging for clinicians. We recently encountered such a case and believe that there are several important learning points to share with our colleagues.

A 57-year-old man with a history of diabetes mellitus, hypertension, and coronary artery disease underwent general anesthesia with endotracheal intubation and thoracic epidural analgesia for an open right partial nephrectomy for resection of a renal tumor. Two bare-metal intracoronary stents had been placed 7 years before surgery. Two years before surgery, routine exercise stress testing revealed excellent exercise capacity. However, maximal stress was accompanied by inferolateral ST segment depressions on electrocardiogram (ECG; Fig. 1a). Subsequent nuclear stress imaging was negative for ischemia. Before surgery, a resting ECG (Fig. 1b) showed sinus bradycardia without stigmata of ischemia. The patient had been active and routinely performed vigorous exercise without difficulty or symptoms. His medications included metformin, atenolol, atorvastatin, quinapril, and aspirin, which was discontinued before surgery.

The surgery and anesthesia were of approximately 3 h duration and uneventful. Intraoperative monitoring of ECG leads II and V5 was normal. Upon emergence from general anesthesia, the patient complained of nausea but denied any chest discomfort. Upon arrival to the post-anesthesia care unit, the patient was pain-free and a epidural dermatomal level was not immediately determined. Cardiac telemetry revealed a widened QRS complex with a heart rate of approximately 90 bpm. A 12-lead ECG showed a new-onset LBBB (Fig. 1c). Prompt diagnostic and therapeutic workup was initiated. As this was immediately following major surgery, emergent cardiac catheterization was deferred. Cardiac biomarkers were cycled for three sets and were within normal limits. Despite adequate heart rate control, the LBBB persisted. Pharmacological nuclear stress testing performed on postoperative day 2 showed no evidence of ischemia or infarction. The patient was discharged on postoperative day 3, with ECG showing LBBB. One month after surgery, a repeat ECG (Fig. 1d) showed complete resolution of the LBBB.

Current guidelines [1] state that new-onset LBBB in the setting of symptoms should be treated as an acute coronary syndrome equivalent, and immediate intervention should be pursued. However, there is no guideline applicable to the case of a new-onset, non-rate-dependent LBBB without symptoms. Furthermore, cases of new LBBB in the perioperative setting, particularly with epidural analgesia, are quite rare [2]. The symptoms may be masked by adequate analgesia. In the circumstance of new-onset LBBB in the postoperative period, echocardiography may be difficult to

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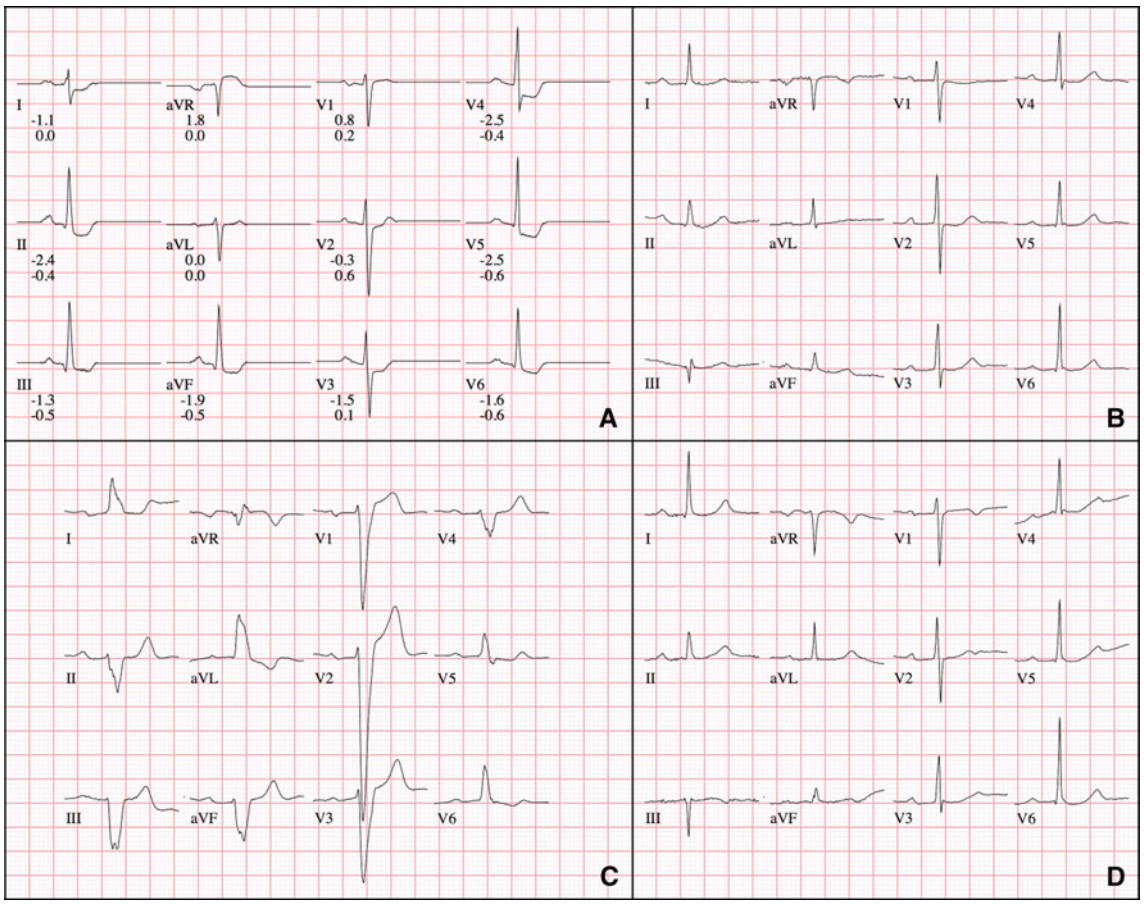

Fig. 1 Twelve-lead electrocardiograms (ECG): 2 years before surgery at maximal exercise (**a**); 1 year before surgery at rest (**b**); in post-anesthesia care unit (**c**); 30 days post surgery (**d**)

interpret because of the conduction abnormality; biomarkers may not rise for several hours; and cardiac catheterization may be relatively contraindicated. Where available, urgent pharmacological stress nuclear imaging may provide diagnostic information. Further discussion concerning the management of new-onset LBBB in the immediate postoperative period is warranted.

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