Abstract: P583

Bradyarrhythmia and cardiogenic shock after cardioversion

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Topic(s):
Acute Cardiac Care – Cardiogenic Shock

Citation:
A 77-year-old female presented with new onset of palpitations developed within the previous 24 hours. Her past medical history was significant for hypertension, hyperlipidemia, polymyalgia rheumatica, paroxysmal atrial fibrillation with multiple previous cardioversions and hypertensive cardiopathy with preserved left ventricular (LV) systolic function and moderate mitral regurgitation. Her home medications consisted of flecainide 100 mg per day, enalapril, atorvastatin, deflazacort and acenocumarol. Physical exam was unremarkable. Her vitals included pulse 125/min irregular, BP 145/82. An electrocardiogram revealed atrial fibrillation (AF) at a rate of around 120/min.

It was first tried to restore sinus rhythm with oral Flecainide 300 mg unsuccessfully. Finally she was cardioverted by a single 200 J synchronized direct current biphasic shock under sedation with Propofol 60 mg. Asystole (20 s) occurred immediately leading to a short resuscitation, followed by junctional rhythm. Immediately thereafter, her BP dropped to 60/30 mmHg and she developed severe shortness of breath, hypoxia and diffuse bilateral crackles. Intravenous fluid didn’t help BP, requiring initiation of norepinephrine infusion, oxygenation with Venturi mask system and transfer to the coronary care unit. Transthoracic echocardiogram (TTE) revealed a severely depressed LV systolic function with diffuse hypokinesis and moderate mitral regurgitation.

During the first hours it was noticed an increase in serum creatinine to 1.4 mg/dl and poor urine output. After 24 hours she was able to be weaned off norepinephrine, with normalization of renal function and resolution of pulmonary edema. Junctional rhythm alternating with sinus bradycardia was observed initially but early recurrence of AF with a heart rate 90 beats/min occurred. Rate control of AF was decided with low doses of beta blockers. Heart failure treatment was initiated with ACEI and aldosterone receptor antagonists. In two days the patient was discharged to the hospitalization room in a stable condition. Her repeat TTE 4 months later showed a preserved left ventricular function. Actually she remains in AF with a controlled ventricular response.

Complications from electric cardioversions are rare but can be severe. Our patient presented two complications in the same procedure. Arrhythmias, most often bradycardia and sinus arrest are known complications after cardioversion of AF, especially in older women, but usually are transient and seldom need any specific treatment. There are few cases of severe disfunction of LV and cardiogenic shock after cardioversion, and some cases may necessitate temporary inotropic or mechanical cardiac support. Pericardioversion use of antiarrhythmic drugs do not increase the risk of bradyarrhythmias but may increase the risk of myocardial stunning. The pre-operative identification of highrisk patients may be useful to avoid this life threatening complications.
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Fig.1: LV disfunction in 4 chambers view in systole. Fig. 2: Interstitial edema on chest x-ray. Fig.3: asystole post-cardioversion.