of patients similar to those enrolled in MADIT II, suggesting that CRP can be used as a simple tool to risk stratify these patients. This is an important finding, as no marker among those investigated to date has shown consistent advantages over assessment of LV function by EF. Our findings are in line with the results of Shehab *et al.*⁵ who found that CRP was associated with the risk of sudden death in 34 patients with chronic heart failure and low EF. Furthermore, CRP was raised in patients who died suddenly and who were found to have coronary plaque rupture in a postmortem study, suggesting that VT/VF may be triggered by sudden myocardial ischaemia.³ CRP may also be a marker of the myocardial substrate prone to develop arrhythmias. Indeed raised CRP serum concentrations have consistently been associated with recurrence of atrial fibrillation in patients who do not have ischaemic heart disease and may reflect the proarrhythmic effect of proinflammatory cytokines. Accordingly, we have recently found widespread myocardial inflammation in patients with a previous myocardial infarction. Larger prospective studies are required to consider these important issues. Some important limitations of this study must be raised, in particular its retrospective design and the small sample size. Therefore, the results can be considered only hypothesis generating, yet this study suggests, for the first time, a role for CRP in risk stratification of arrhythmic events in patients similar to those in MADIT II.

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REFERENCES

- 1 Moss AJ, Zareba W, Hall WJ, *et al.* Prophylactic implantation of a defibrillator in patients with myocardial infarction and reduced ejection fraction. For the multicenter automatic defibrillator implantation trial II investigators. *N Engl J Med* 2002;**346**:877–83.
- 2 Albert CM, Ma J, Rifai N, *et al.* Prospective study of C-reactive protein and homocysteine and plasma lipid levels as predictors of sudden cardiac death. *Circulation* 2002;**103**:2592–9.
- 3 Burke AP, Tracy RP, Colodgie F, *et al.* Elevated C-reactive protein values and atherosclerosis in sudden coronary death: association with different pathologies. *Circulation* 2002;**105**:2019–23.
- 4 Farb A, Tang AL, Burke AP, *et al.* Sudden coronary death: frequency of active coronary lesions, inactive coronary lesions, and myocardial infarction. *Circulation* 1995;**92**:1701–9.
- 5 Shehab AM, MacFadyen RJ, McLaren M, *et al.* Sudden unexpected death in heart failure may be preceded by short term, intraindividual increases in inflammation and in autonomic dysfunction: a pilot study. *Heart* 2004;**90**:1263–8.

IMAGES IN CARDIOLOGY

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Bladder compression: an unusual presentation of retroperitoneal haematoma

A 56-year-old man underwent percutaneous intervention with an unsuccessful attempt to open a chronic total occlusion of the right coronary artery and successful implantation of a 4 × 12 mm paclitaxel eluting stent in the circumflex. Before the procedure he received clopidogrel and aspirin and periprocedural anticoagulation was attained with 9000 units of unfractionated heparin (bodyweight 102 kg). The activated clotting time peaked at 330 seconds.

An 8 French sheath was inserted in the right femoral artery and a 6 French in the left femoral artery to allow contralateral injections for distal visualisation. At the end of the procedure femoral angiography was performed before access site closure using 2 Closer S devices (Perclose, Abbott Vascular, Redwood City, California, USA).

Two hours later the patient became progressively hypotensive (blood pressure 90/50 mm Hg) and complained of right iliac fossa pain. He was immediately resuscitated with intravenous colloids and catecholamines. Manual compression on the right groin was applied for 30 minutes and 30 mg of protamine sulfate was given (activated clotting time 180 seconds). A computed tomographic (CT) scan confirmed the presence of a right sided retroperitoneal haematoma. Clinical recovery was uneventful.

Later we reviewed the femoral angiography carried out at the end of the procedure. We noted a normal convex bladder outline

on the left side (panel A); on the right side, however, the bladder outline was concave suggesting some early compression from the retroperitoneal haematoma (panel B). We feel this case highlights an additional rare but important benefit of performing femoral angiography before access site closure. While this sign is subtle, early diagnosis of this potentially fatal complication could allow aggressive prompt management including fluid resuscitation and the possibility of reversing anticoagulation and performing prolonged manual compression.

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