



## Surprisingly nonbenign imaging

Rarely these days do we hear about a new, nongenetic clinical syndrome, and even more rarely does the news make us rapidly change our practice behavior. But the description of nephrogenic systemic fibrosis and its epidemiologic association with gadolinium exposure in patients with chronic renal disease have led to immediate changes in our choice of imaging studies.

As reviewed by Dr. Naim Issa and colleagues on page 95 in this issue of the *Journal*, practices are changing with regard to choice of imaging techniques and contrast materials in patients with renal insufficiency. In 1 week, while on our inpatient rheumatology consultation service, I specifically commented in two patients' charts that I would prefer to avoid the use of gadolinium because the patients had significant renal dysfunction. Since the patients did not yet need dialysis, standard contrast dye was also relatively contraindicated. It was a bit of a dilemma.

In an accompanying editorial on page 112, Dr. Jonathan Kay proposes that this pseudoscleroderma syndrome be called "gadolinium-associated systemic fibrosis (GASF)." Dr. Kay and colleagues have recently published an important study (*Arthritis Rheum* 2007; 56:3433–3441) in which they report that, with a focused physical examination, this often-unrecognized clinical syndrome can be diagnosed in 13% of patients undergoing chronic hemodialysis and that the diagnosis indicates a significant risk of death. They confirm the suggestion of earlier authors that exposure to gadolinium is a significant predisposing factor for the syndrome.

Gadolinium is not the first exogenous chemical trigger of a fibrosing syndrome to be identified: eg, bleomycin (Blenoxane) is a well-known trigger of pulmonary fibrosis. Pseudoscleroderma syndromes have been described after exposure to certain rapeseed oils and to impure preparations of tryptophan (the "eosinophilic-myalgia syndrome"). The mechanisms of these reactions are not fully understood, and other than the accumulation of gadolinium in tissues in the setting of chronic renal disease, not much is known about the pathophysiology of GASF.

Guidelines will be proposed to try to limit the occurrence of this devastating syndrome. But we can only guess as to the glomerular filtration rate cutoff at which we should be most concerned, and we can only hope that acute dialysis after gadolinium exposure will be protective. In the meantime, we will need to revise our view that "MRI with contrast" is a benign test.

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