Persistent Raynaud’s phenomenon after exposure to vinyl chloride monomer: Assessment of endothelial damage

Sirs,

Vinyl chloride monomer (VCM) (C.A.S. No. 75-01-4), a colourless gas under ambient conditions, is involved in the manufacture of Polyvinyl chloride (PVC), a widely used plastic. VCM exposure can induce scleroderma-like diseases including osteoarthritis of the phalanges, scleroderma skin changes and Raynaud’s phenomenon. Since these symptoms occur together during exposure, a common pathogenesis based on injury to the endothelial cells has been proposed (1,2). Indeed VCM exposure is toxic for the vascular endothelium, as shown by angiographic studies and by hand artery and capillaroscopic examinations (2,3). After removal of the affected workers from further VCM exposure, cessation or reversibility of the disease process has been described.

However, in a previous study we observed that some former VCM-exposed workers employed in the same VCM plant still had Raynaud’s phenomena attributable to VCM at least 10 years after their last exposure. Furthermore, capillaroscopic abnormalities were discrete and no sclerodermatous changes were observed (4). We therefore compared vWF levels Ag, a product of endothelial cells which has been proposed as a marker of endothelial dysfunction or damage to the endothelium (5), in formerly VCM-exposed workers with Raynaud’s phenomenon and in formerly VCM-exposed workers without Raynaud’s phenomenon, to establish whether persistent RP secondary to VCM exposure could be caused by persistent endothelial cell injury/activation.

These and our previous results make this hypothesis improbable. Indeed we observed no association between the presence of Raynaud’s phenomenon and increased vWF levels. Previously we observed no correlation between the pattern of capillaroscopic abnormalities and persistent RP appearance and no skin abnormalities in former VCM-exposed workers with Raynaud’s phenomenon (4).

A neurogenic mechanism could be proposed and VCM could act on the peripheral nerves. Indeed, paraesthesiae of the fingers are described peripheral manifestations in vinyl chloride poisoning. Ann NY Acad Sci 1975; 246: 53-69.


9. BLANN AD, J. LINGWORTH K, JAYSON MIV: Mechanisms of endothelial cell damage in
Systemic lupus erythematosus and Crohn’s disease: An uncommon association of two autoimmune diseases

Sirs,

The association of systemic lupus erythematosus (SLE) with inflammatory bowel disease is rare (1-3). Moreover, the differentiation between digestive manifestations of SLE and extra-digestive manifestations of Crohn’s disease (CD) may be particularly difficult (2). Also, sulphasalazine therapy has been implicated in the development of lupus-like syndrome in patients with inflammatory bowel disease (4,5). We report a new case of the association between these two autoimmune diseases. In our case, SLE manifestations preceded the clinical manifestations of CD and, consequently, no drug therapy implication in SLE manifestations was found. A 41-year-old Caucasian woman presented at the hospital because of abdominal pain and diarrhea. She had been diagnosed 2 years earlier as having SLE because of a photosensitivity malar rash, oral ulcers, peripheral synovitis, positive antinuclear antibodies at 1/1280 (by indirect immunofluorescence using as substrate Hep2 cells), and positive anti-cardiolipin antibodies (by indirect immunofluorescence using as substrate crithidia lucilae) at 1/80. At the time of the onset of diarrhea she was also on treatment with non-steroidal anti-inflammatory drugs and chloroquine (250 mg/day). She recalled her symptoms having begun with abdominal pain and bloody diarrhea (8 times a day) 1 week before admission.

Physical examination showed abdominal distention, but no clinical features of SLE flare-up were observed. Apart from anemia (hemoglobin 9.04 g/dl) no other hematological abnormalities were found. Hepatic and renal function tests were normal. Antinuclear antibodies and anti-native DNA were positive at 1/320 and 1/40, respectively. Serum levels of C3 and C4 were within normal ranges. IgG and IgM anticardiolipin antibodies and ANCA tests were negative. Negative results for both stool cultures and parasitologic examinations of the feces ruled out enteric bacterial pathogens or amebiasis. Chest radiograph and electrocardiogram were also normal.

A colonoscopy showed edematous and hyperemic areas with aphthous ulcers, pseudopolyps and deep transversal and longitudinal fissures. These features were compatible with a moderately active CD. Biopsy specimens confirmed the endoscopic findings. Microscopic examination revealed a chronic inflammation affecting all layers of the colon, which was more severe in the lamina propria of the mucosa with infiltration of lymphocytes and plasmatic cells, aphthous ulcers in areas with lymphoid hyperplasia, fissures extending into the serosa, epithelial cells and multinucleate giant cell granulomas. Figure 1 shows the inflammatory infiltrate with granuloma formation. Neither thrombi in vessels nor any other evidence of ischemic colitis were observed. Once the diagnosis was established steroid therapy (prednisone 1 mg/Kg) and azathioprine (2 mg/Kg) was started and a rapid improvement of symptoms was observed. At present, 6 months after the diagnosis the patient is free of symptoms. The diagnosis of SLE in our patient was based on the criteria proposed by the American College of Rheumatology (formerly the American Rheumatism Association) (6). All parts of the gastrointestinal tract may be involved in SLE (7). However, the development of CD in patients with lupus unrelated to drugs is exceptional (2, 3). Although vasculitis in the bowel due to SLE may be difficult to distinguish from the onset of an inflammatory bowel disease, the onset of diarrhea and abdominal pain in our patient was not associated with a flare of her SLE. In this case, histological findings are the cornerstone to making the differential diagnosis between the two conditions. Evidence of immunofluorescence deposits of immunoglobulins and complement on the capillary wall and electrodeposits on electronic microscopy are needed to establish a diagnosis of lupus vasculitis involving the gut.

J. SANCHEZ-BURSON
C. GARCIA-PORRUA
M.I. MELGUZO

1 Division of Rheumatology, Valme University Hospital, Seville; 2 Division of Rheumatology, Hospital Xeral-Calde, Lugo; 3 Department of Internal Medicine, Valme University Hospital, Seville, Spain.

Address correspondence to: Dr. Miguel A. Gonzalez-Gay, Hospital Xeral-Calde, 27004 Lugo, Spain.

References