CASE DESCRIPTION

A 55-year-old man with ankylosing spondylitis presented with increasing symptoms despite treatment with adalimumab. The decreased therapeutic response raised concern that he had produced antibodies against the drug or that he had cross-reacting antibodies made against a similar drug, infliximab, with which he was treated 7 years earlier.

Tests for antibodies against the drugs were negative, but the serum adalimumab and infliximab concentrations, reported automatically with results for antidrug antibodies, were 4.4 and 4.6 μg/mL.

QUESTIONS

1. What are adalimumab and infliximab?
2. How are such drugs measured?
3. What is the explanation for the reported finding in serum of a drug that had not been prescribed for the patient in 7 years?

The answers are on the next page.
Adalimumab and infliximab are monoclonal antibodies against tumor necrosis factor (TNF)-α. Antidrug antibodies were ruled out in this patient (1, 5).

The drugs are measured by various techniques including immunoassay and mass spectrometry (2–5). In this patient, the assay relied on binding of drug to fluorescently labeled TNF-α, which produces a higher molecular weight complex that is separated and quantified by HPLC (Fig. 1). Separate calibration curves are used for adalimumab and infliximab, but the assays cannot distinguish between the two.

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**References**