



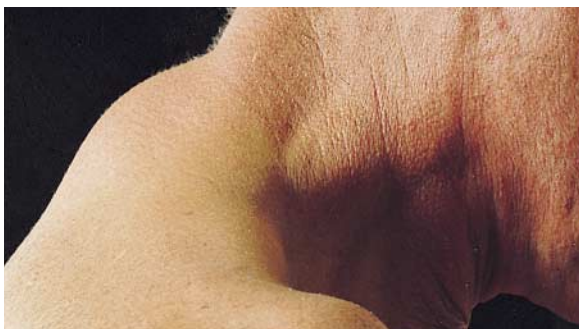
Images in Clinical Medicine



A



B



C

Lipodystrophy Associated with an HIV-Protease Inhibitor

A 53-year-old man had human immunodeficiency virus (HIV)-related lymphoma, which had been in remission since 1987; a CD4+ lymphocyte count of 510 cells per cubic millimeter; and an HIV RNA load of 5000 copies per milliliter. The addition of the HIV-protease inhibitor indinavir (800 mg three times daily) to his antiretroviral regimen of zidovudine and lamivudine resulted in a decrease in the HIV RNA load to undetectable levels and an increase in the CD4+ count to 918 cells per cubic millimeter. Measurement of cholesterol (298 mg per deciliter [7.7 mmol per liter]; reference range, <193 mg per deciliter [5.0 mmol per liter]), triglycerides (239 mg per deciliter [2.7 mmol per liter]; reference range, <177 mg per deciliter [2.0 mmol per liter]), and C peptide (4.0 μ g per liter; reference range, 0.9 to 1.8 μ g per liter) while the patient was fasting revealed hypercholesterolemia, hypertriglyceridemia, and insulin resistance. Impaired glucose tolerance was diagnosed on the basis of a glucose-tolerance test (blood glucose, 108 mg per deciliter [6.0 mmol per liter] during fasting and 176 mg per deciliter [9.8 mmol per liter] at two hours). Within three to seven months after the initiation of indinavir, fat wasting of the face (Panel A), arms, buttocks, and legs developed, and the leg and arm veins became prominent. There was concurrent central obesity (Panel B) and enlargement of the cervicodorsal fat pad, referred to as buffalo hump (Panel C). Loss of body fat was confirmed by dual-energy x-ray absorptiometry. Clinically, muscle mass and strength were normal, and there was no abdominal organomegaly, mass, or ascites. The fasting morning plasma cortisol concentration was 11 μ g per deciliter (308 nmol per liter; reference range, 7 to 22 μ g per deciliter [200 to 600 nmol per liter]). These changes have continued to progress during the 19 months of therapy. The patient expressed concern about continuing indinavir therapy because of the changes in his physical appearance and the potential risk of long-term cardiovascular disease.

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