Case report

A 51-year-old woman came to the emergency room with a history of alcoholic cirrhosis, portal hypertension, and esophageal varices (previously treated with sclerotherapy) and chronic renal failure, with her last creatinine clearance measured at 40 ml/h. She was classified as Child-Pugh C. She had presented upper digestive tract bleeding for 12 h. After 24 h with persistent hemorrhage, intravenous terlipressin was added to the management (4 mg/24 h); on the third day after treatment, she developed cyanosis of the toes, and the terlipressin was discontinued immediately. These changes progressed to ischemia and extended throughout the feet, accompanied by poor peripheral pulses and tissue damage as shown in figure 1-A. Because of her blood loss, acute renal failure developed, with an elevation of serum creatinine from 1.9 mg/dl on the first day to 8 mg/dl, and she developed grade IV hepatic encephalopathy; serum bilirubin was normal and an arterial and venous Doppler ultrasound was performed showing no signs of obstruction and normal flows. Because of the lack of response to management we started treatment with oral sildenafil 50 mg twice per day. At the third day she showed great improvement and sildenafil 75 mg/24 h was continued for two more weeks. She preserved her toes. At this point, she had grade I encephalopathy, and also had improvement of renal function with a reduction in serum creatinine to 3.2 mg/dl.

Finally, at day 30, the patient was completely recovered, with normal serum creatinine, a normal neurological state and healthy skin (fig. 1-C).
Fig. 1. Sequential pictures of the patient’s evolution. Despite treatment with dermic nitroglycerin and other vasodilator drugs, necrotic areas, ischemic and other lesions are showed (picture A and B). At day 25 sildenafil starts to show a good response which is observed in picture C.

Discussion

Sen et al described a possible toxic effect of terlipressin related to its vasoconstrictor action.\textsuperscript{1} Terlipressin has been associated with peripheral ischaemia\textsuperscript{2} and vasculitis-like lesions, like the ones observed in this case. Sildenafil is a selective inhibitor of GMP-phosphodiesterase with an effect on microvascular and macrovascular circulation, approved for use in erectile dysfunction, pulmonary arterial hypertension, and recently described by Fries et al for use in Raynaud’s phenomenon in cases not showing a response to common vasodilator therapy.\textsuperscript{3} Kumana et al has informed of sildenafil use in the presence of ischemia and tissue necrosis, with improvement of three severe cases.\textsuperscript{4} The effect obtained from the use of sildenafil, due to vasodilatation, could be considered as an effective therapy in cases of ischemia secondary to terlipressin, like the case above, when some other vasodilators agents cannot be indicated due to deleterious effects like hypotension. Another beneficial effect of sildenafil could be an increase of renal arterial flow with improvement of renal function in acute renal failure; the latter should be investigated to a larger extent. Sildenafil opens the possibility of use in ischemia of another etiology, and should be the object of more study as an alternative drug or even as the first option, alone or associated to other vasodilators, in severe cases of ischemia.\textsuperscript{5–8}

References