Four years prior to this admission bilateral lumbar sympathectomy was performed. Three months later endarterectomy of both iliac and femoral vessels were done. On examination, her femoral pulses were weak on both sides and there was a prominent systolic bruit over the right femoral artery. There were no other abnormal clinical findings and the laboratory data were normal. On her second hospital day a left radical mastectomy was performed uneventfully under halothane nitrous oxide endotracheal anesthesia.

Three hours after the end of the procedure she complained of severe pain in the right leg. No pulse was felt in the right femoral artery. The skin of the right leg and foot felt cold. There was marked discoloration and mottling of the skin from the mid-thigh region downwards. Epidural block was instituted using 20 ml. of 1 per cent mepivacaine (Carbocaine). This was followed by immediate relief of pain and striking improvement in the color of the skin of the right lower extremity. The skin felt warm to touch in both legs. A right iliac thrombectomy and a vein patch graft of right common femoral artery were done. The postoperative course was satisfactory and signs of vascular insufficiency did not recur.

Comment

Patients with arteriosclerosis obliterans are prone to develop arterial thrombosis postoperatively.[2] Prevention of hypotension and maintenance of adequate blood volume are important factors in avoiding this complication. Pressure on, or obstruction of diseased arteries can cause thrombosis. In this case, no hypotension occurred during the operative or postoperative periods. A combination of hypovolemia and peripheral vasoconstriction may have contributed to production of thrombosis in the absence of hypotension. Although lumbar sympathectomy was performed four years prior, the response to epidural blockade was dramatic. The significant improvement of skin color and temperature were obviously due to relief of vasoconstriction of the collateral circulation. Presence of such vasoconstriction in a previously sympathectomized patient could have been due to incomplete denervation or regeneration of an active sympathetic supply to the lower limbs. Incomplete denervation is not uncommon following lumbar sympathectomy.[3] Regeneration occurs in about 10 per cent of the cases, resulting in a slight degree of recovery of vasomotor tone two or three years post sympathectomy.[1, 2] In this patient it may be assumed that enough time has elapsed to account for the return of vasomotor control of the lower extremities.

References

1. Monro, P. A. G.: Sympathectomy: An Anatomical and Physiological Study with Clinical Applications. Oxford University Press, 1959.
2. Key, J. A.: Silent thrombosis in major limb arteries: A post-operative hazard, Surgery 47: 734, 1960.
3. White, J. C., Smithwich, R. H., and Simeone, F. A.: The Autonomic Nervous System. New York, The Macmillan Company, 1952.

Anesthesia

PRILOCAINE HYDROCHLORIDE Prilocaine hydrochloride is a local anesthetic that is similar chemically and in effectiveness to lidocaine and mepivacaine. It is useful for infiltration and block anesthesia in obstetrics and surgical procedures. The systemic toxicity of prilocaine hydrochloride is qualitatively similar to that of lidocaine and other local anesthetics, but excessive doses of prilocaine will produce methemoglobinemia due to the metabolite, o-toluidine. If clinically significant symptoms of methemoglobinemia occur, they can be effectively reversed by the intravenous injection of methylene blue. Prilocaine should not be used in patients with anemia or congenital or idiopathic methemoglobinemia. (*Council on Drugs: Evaluation of a Local Anesthetic Agent, Prilocaine Hydrochloride (Citanest), J.A.M.A. 199: 173 (March) 1967.*)