Infected Graft Fistula following Dental Surgery

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Dear Sir,

Patients receiving maintenance hemodialysis through an arteriovenous fistula are usually given antibiotic prophylaxis before undergoing dental procedures [1]. Reasons for this practice include an increased susceptibility to infection, including bacterial endocarditis, and the belief that the vascular access site represents a potential area of bacterial seeding. However, to my knowledge, infection of the fistula following dental procedures has rarely been documented. I wish to report a case in which this association was noted.

The patient is a 64-year-old man with chronic renal failure not yet requiring dialysis. Five months before the present illness, he had an expanded polytetrafluoroethylene graft inserted in the right forearm. The graft fistula had never been punctured, nor was there a history of trauma or venesection on that arm and no history of intravenous drug use. One week before admission, he had a dental procedure without antibiotic prophylaxis. Four days before admission, he developed a low-grade temperature elevation and noted redness and swelling of the right forearm along the line of the graft.

On examination, temperature was 38.3 °C, BP 140/80 mm Hg and pulse 80 bpm. The skin of the right forearm immediately overlying the graft was red, warm, indurated and tender. A good thrill and bruit were present. Laboratory values: Na 136 mEq/l, K 4.4 mEq/l, tCO₂ 22 mEq/l, BUN 87 mg/dl (14.5 mmol/l), creatinine 12 mg/dl (1,060 µmol/l), Hb 9.3 g/dl, WBC 10,400/mm³ (57% polys, 7% bands, 20% lymphocytes). Blood cultures grew group B β-hemolytic streptococcus in 2 of 3 bottles.

Treatment was initially vancomycin but was later changed to cefazolin when the sensitivities of the organisms were available. Over the next 4 days, the symptoms and signs improved rapidly and on completion of the course of antibiotics, the patient was discharged.

This case presents several features of interest. Firstly, it shows that access created for hemodialysis may become infected without the local trauma of needle insertion. Secondly, it suggests that septicemia and graft infection may follow dental procedures in these patients. Unfortunately, details of the dental procedure were rather sketchy. Moreover, B streptococcus is an unusual organism in this situation, the usual portals of entry being gastrointestinal and genitourinary. However, the organism has been recovered from throat cultures [2]. We were unable to confirm the presence of this organism in our patient's oral flora as antibiotics had already been started before this source was suspected. Nevertheless, the close temporal association between dental surgery and septicemia with cellulitis localized to the site of the graft-fistula would seem more than coincidental.

It is obviously unwise to place undue reliance on a single case. However, the experience reported here suggests that the practice of giving prophylactic antibiotics to patients on hemodialysis before dental procedures is wise.

References

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