stitch, so there is no cortical hypoperfusion. The kidney is then re-inspected for vascular insufficiency and two suction drains are placed adjacent to the hilum. The patient must be closely observed postoperatively for evidence of re-bleed and post-operative biopsy must be avoided.

DISCUSSION

This technique is a viable option for haemostasis and the prevention of fracturing in a transplanted kidney. It can be used to avoid transplant nephrectomy without compromising vascularity and function.

References

1. Lee SS, Cheng CL, Yu DS, Chang SY, Ma CP. Vicryl mesh repair of severely injured kidneys: an experimental study. *J Trauma* 1993; **34**: 406–10.
2. Heimbach D, Miersch WD, Buszello H, Schoeneich G, Klehr HU. Is the transplant preserving management of renal allograft rupture justified? *Br J Urol* 1995; **75**: 729–32.

A quick and simple technique for irrigation of open fractures

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BACKGROUND

Wound irrigation to remove debris and decrease contamination is an essential step in management of open fractures and wounds.¹ Debate still continues over the best irrigation system. Various systems of high- and low-pressure irrigation have been described but all have their pitfalls.² We describe a quick, simple, cheap and effective method for irrigation of open fractures and soft-tissue injuries.

TECHNIQUE

Our technique requires a sterile 1-l bag of normal saline and a sterile Yankauer sucker (Fig. 1A). The outflow port of the bag is cut and the Yankauer sucker is attached (Fig. 1B). This allows the saline to be well directed and, in addition, the holes at the far end act as a sprinkler system. It is perfect for irrigating open fractures and wounds quickly and gives the ideal low-pressure, high-output system. The flow rate measured via this method is 1.5 l/min.

A

B

Figure 1 (A) A 1-l bag of normal saline and the Yankauer sucker. (B) The Yankauer sucker attached to the saline bag for irrigation system.

DISCUSSION

This technique has been used effectively in our theatres and can also be extended to the accident and emergency department setting. Also, as compared to the other irrigation systems described in the literature³ namely, a 60-ml syringe with 19-gauge needle, a giving set and gravity, a giving set with 400 mmHg and the pulsatile lavage system, our technique has the highest flow rate, thereby allowing copious amounts of fluid to be delivered in a very short span of time.

References

1. Gustilo RB, Anderson JT. Prevention of infection in treatment of one and twenty five open fractures of long bones. *J Bone Joint Surg Am* 1976; **58**: 453–8.
2. Dulecki M, Pieper B, Detroit M. Irrigating simple acute traumatic wounds. A review of the current literature. *J Emerg Nurs* 2005; **31**: 156–60.
3. Karupparsamy K, Hutton MJ, Porteous MJL. A novel system for the irrigation of open fractures. *Injury* 2004; **35**: 980–1.