Comparison of Two Methods of Tenckhoff Catheter Insertion

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Dear Sir,

The best method for the insertion of a Tenckhoff catheter is controversial. The most commonly used technique is an open surgical approach by minilaparotomy, often with a general anaesthetic. However, this method is frequently complicated by dialysate leakage through the incision. Although methods of catheter insertion using guidewire techniques have been described [1-3], they do not appear to be used widely. In a survey of 21 renal units in the United Kingdom, we found that none of the units used a guidewire method, but 20 inserted their catheters by minilaparotomy with a general anaesthetic in 12 units. We have reviewed our experience of Tenckhoff catheter insertion by a guidewire technique and compared it to the most commonly used method.

We compared 23 catheters inserted by a guidewire method into 21 patients to 32 consecutive catheters inserted by an open surgical method. In the guidewire method the peritoneal cavity was punctured with a 16-gauge plastic-sleeved cannula through a 1.5-cm incision. A guidewire and introducer were then inserted into the peritoneal cavity and a Tenckhoff catheter inserted through a peelaway sheath (Cook Inc.). The catheter was then tunnelled in the usual manner. All procedures were performed under local anaesthesia with prophylactic antibiotics for 5 days. In the open method the Tenckhoff catheters were inserted by minilaparotomy in an operating theatre under a general anaesthetic. Peritoneal dialysis was commenced immediately "after catheter insertion in both groups.

Poor drainage requiring catheter removal was more common with catheters inserted by the guidewire method ($\frac{1}{23}$ vs. $\frac{7}{32}$). The 6 failures occurred in 4 patients who each received 2 catheters by the guidewire method. In 2 patients both catheters inserted by the guidewire method failed, one of these patients then had a catheter successfully inserted by the open method, the other patient had massive polycystic kidneys and a catheter inserted at minilaparotomy also failed to function. Dialysate leakage requiring temporary cessation of dialysis seen less often with catheters inserted by the guidewire technique ($\frac{7}{23}$ vs. $\frac{16}{32}$). Dialysate leakage in the guidewire group was usually subcutaneously into the scrotum or abdominal wall ($\frac{3}{4}$ patients) while leakage occurred through the incision in the open group. The former may be associated with a lower risk of peritonitis. No episodes of catheter-related infection were seen in either group. Our first catheter inserted by the guidewire method is still functioning well 8 months later.

The guidewire method described by us is similar to that used in the USA [1, 2]. Unlike that described by Di Paolo et al. [3], it uses a commercially available kit and does not require any special instruments. The guidewire method appears to be safe, although we have seen one case of bowel perforation, which sealed spontaneously, during insertion of an acute peritoneal dialysis catheter. In our hands, drainage problems were more frequent with the guidewire method, but the benefits of this method outweighed this inconvenience. CAPD is often used for high-risk patients, in whom general anaesthesia is undesirable and catheter leakage preventing dialysis is

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inconvenient. Percutaneous Tenckhoff catheter insertion using a guidewire method is safe, convenient and reliable ; it is also less expensive and traumatic than the open method and deserves to be used more widely. Our current practice is to insert single-cuff and Tenckhoff peritoneal dialysis catheters by the guidewire technique in patients with acute or chronic renal failure who are unlikely to have abdominal adhesions.

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