Rupture of Double Lumen Hickman Catheter at Time of Removal by Surgery – Another Potentially Serious Complication

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Dear Sir,

Double lumen indwelling Hickman catheters have become a useful alternative to arteriovenous fistulas for angioaccess in patients who require haemodialysis only temporarily or have problems with their fistulas during chronic haemodialysis [1]. Although being an effective vascular access, the catheter inserted in the subclavian or internal jugular vein may cause a variety of inherent or postcatheterization complications [2, 3]. We report another serious complication which occurred after 11 weeks of successful use of the catheter at the time of removal by surgery.

A 30-year-old female with diabetic ne-phropathy had thrombosis of her fistula with irreversible loss of function. A new arteriovenous fistula was created, and simultaneously a double lumen catheter was implanted by the right internal jugular route according to the manufacturer's instruction. Subsequently, haemodialysis was performed for 11 weeks using the catheter. After maturation of the fistula removal of the catheter was initiated. At this procedure the surgeon cut the external part of the catheter and made an incision of the cervical cutis and subcutis. When mobilizing the catheter it appeared fixed in the vein. Upon pulling off, the catheter ruptured at the site of insertion into the jugular vein (fig. 1). The intravenous part of the catheter embolized into the right atrium. The patient was brought to the angiography room immediately. Following well-described methods transfemoral removal of the embolized part of the catheter was successful.

In our department 41 double lumen Hickman catheters (Permcath, Quinton, Seattle, Wash., USA) have been implanted for angioaccess in 40 of 224 consecutive patients with end-stage renal disease since 1986. The catheters were used for a mean of 75 ± 65 days

Fig. 1. Site of external cut by the surgeon (asterisk) and site of rupture (arrow).

(range 1-288 days). More serious complications observed in our series were bleeding immediately after insertion requiring surgical revision in 3 patients, thrombosis of the catheter lumen successfully managed with local instillation of urokinase in 2 patients, and occlusion of the superior caval vein after ex-plantation of the catheter in 2 patients.

Apart from insufficient flow or clotting of the catheter lumen most of the complications reported on the use of this catheter have been secondary to infection [4, 5]. To our knowledge rupture of a double lumen catheter, a potentially life-threatening complication, has not been described so far. The cause of this event remains unclear. The position of the catheter without kinking monitored by chest X ray was correct and no obvious defect in the material of the catheter was found. We conclude that, although this catheter is an effective alternative angioaccess, the indication for its use should be handled strictly as potentially life-threatening complications may occur.

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