Delayed Onset of Hemothorax: An Unusual Complication of Subclavian Access for Hemodialysis

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Dear Sir,

We were interested to read the short report by Waldman et al. [Nephron 37: 270–272, 1984] describing the delayed development of a right hemothorax following left subclavian catheterization for hemodialysis. They draw attention to the well recognized phenomenon of late perforation of the superior vena by the catheter tip which had been shown by X-ray immediately after insertion to be in a satisfactory position. Whether this late perforation of the vein wall, leading to hemothorax during dialysis as blood is returned to the patient, is entirely spontaneous, or caused by dialysis attendants pushing a catheter back into a patient when it was seen to be slipping out, has in most cases remained an unanswered and tantalizing question. The real solution to this problem, as we have suggested previously [1], is for all subclavian hemodialysis catheters to have soft, floppy tips which are not capable of perforating the wall of the superior vena cava even if they are misused or incorrectly positioned. There is no evidence in Waldman's patient that any misuse occurred and one is bound to wonder whether the catheters they were using have unacceptably rigid tips. The time has come for us all to demand from our suppliers safe catheters with floppy tips.

While on the subject of delayed hemothorax after subclavian cannulation we would like to draw the attention of your readers to another potential cause. We had the unfortunate experience of carrying out an accidental puncture of the subclavian artery with the introducing needle during an attempted subclavian catheter insertion in a 26-year-old woman being dialyzed for the first time for end-stage renal failure. The insertion was completed satisfactorily on the contralateral side and the chest X-

ray was passed as normal. 4 h later the patient was heparinized and received a 3-hour hemodialysis during which she nearly exsanguinated from the original subclavian artery puncture. Her life was saved by prompt resuscitation on the part of the housestaff. 2.5 l of blood were drained from the thoracic cavity on the side of the arterial puncture, and at thoracotomy the puncture was found to have closed spontaneously. Subsequent more careful examination of the first chest X-ray revealed a very small pleural effusion on the side of the arterial puncture. Inadvertent subclavian artery puncture occurs occasionally even in the most experienced hands but bleeding stops quickly and no complications have been described from this cause if patients have normal hemostasis. Ever since this episode we have adopted the policy of postponing hemodialysis for at least 24 h after any accidental subclavian artery puncture. We would strongly recommend others to do likewise. If hemodialysis is required immediately for some life-

threatening reason, an absolute minimum of heparin should be used and the patient should be observed very closely for signs of bleeding.

Reference