Dear Sir,

We have been using double-cuff Tenckhoff catheters for 5 years, manufactured in North America, which were sterilized with ethylene oxide. Our dialysis population amounts to about 30 continuous ambulatory peritoneal dialysis and 5 intermittent dialysis patients. During the past 36 months, we have observed a rise in the frequency of spontaneous ruptures of peritoneal catheters, involving about ten incidents in our centre to this day. In each instance, the catheter was recut and the connection restored. Under systematic 48-hour intraperitoneal cotrimoxazole protection, no peritonitis occurred. The first incidents were considered accidents. The patients underwent thorough interrogation, but no obvious reason was found. The last such incidence occurred in September 1995, the catheter being inserted in February 1994. Rupture, which has up to now only been observed in continuous ambulatory peritoneal dialysis using the UV Flash system, happens each time precisely at the junction between titanium nozzle and catheter, at the radiopaque strip.

Puzzled by the increasing number of ruptures, we learned incidentally that iodized disinfectants should not be used in hemodialysis silicone catheters [Sposito, unpubl. data]. Now, we use 10% iodized polyvidone to disinfect the titanium nozzle area every time the extension is replaced, about every other month to up to now. As these devices, the composition of which is not precisely known to us, contain silicone [1], it may be possible that rupture occurs when some chemical weakening caused by interaction with the disinfectant iodine is aggravated by local mechanical strains. The area involved withstands important tractions, torsions, and bending of the line, especially when using the non-disconnect technique where the patients wind their line and the empty bag. The radiopaque strip probably has a weakening effect too. However, since these incidents occurred recently, a possible hypothesis is that the composition of the catheters was modified during the past years, possibly involving an increased ratio or another type [2] of silicone.

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Fig. 1. Typical location of spontaneous rupture: at radiopaque strip level and the junction between peritoneal catheter and titanium nozzle.

References

Samples of catheters have been sent to the supplier for further investigations, and we have decided to cease using concentrated iodized disinfectants until more information is available. Accurate identification of the catheters involved was not possible, in contrast to other intrabody devices such as cardiac pacemakers and artificial valves. We think that the precise chemical composition of the catheter should be noticed, along with the chemical incompatibilities [2]. Caution in utilization should be pointed out, and each catheter should be precisely identified like other intrabody devices.

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