Migration of fine bore Silastic catheter to pulmonary artery

EDITOR,—We wish to report a serious complication that occurred during the use of a line, which was to be used to administer intravenous antibiotics to a 12 year old boy with dysmorphic features. A fine bore Silastic neonatal catheter (Epilastic-Carbo-Catheter model No 2184, Vygon) was used. This model has a detachable Silastic indwelling catheter that is inserted through a supplied 19 gauge needle. The proximal end of the catheter contains a short metal rod that is anchored within the distal end of the external supply line to prevent migration once sited. After venepuncture of the left basilic vein the catheter, unattached to the supply line, was threaded through the needle. The catheter was almost fully advanced so that the distal end might lie in a satisfactory position within the great vein. The needle was then removed from the vein and disengaged from the catheter by threading it over the proximal end. At this point the catheter was inserted into the vein and when the needle was fully removed, the proximal end was still not visible. Chest radiography revealed the metal proximal tip of the catheter to be lying in the right pulmonary artery. The catheter itself was radiolucent. We presume that dynamic venous flow and negative intrathoracic pressure caused aspiration of the whole catheter and its mechanism of circulation. Subsequently, the patient underwent general anaesthetic and cardiac catheterisation. The catheter was successfully removed intact using a snare wire during a difficult and lengthy procedure. We have used this type of line successfully for a number of years. The manufacturers inform us that this complication has occurred once before worldwide. They also stated that adherence to the instructions included with the line, updated in April 1992, should prevent this complication. The instructions state that, after advancing the catheter through the needle to the desired position, ‘the catheter should then be fixed in its final position by applying slight pressure beneath the needle tip and the needle is then withdrawn’. However, there is no warning in the instruction leaflet of the potential complication reported here, and we therefore gather that this will be highlighted in future.

The use of short and long indwelling venous catheters is known to carry a small risk of embolism to the heart and great vessels and has in the past led to both serious morbidity and mortality due to thrombus formation, infection, and perforation. For these reasons, attempted removal of embolised catheters or fragments is recommended. This has been achieved by thrombectomy and by cardiac catheterisation.

Emboliom has been more commonly reported with use of the ‘needle in catheter’ form of cannulas, although these are not free from risk of fracture and embolism. Embolism due to disconnection of the catheter from the supply line has also been described and most catheters now in use have undetachable external hubs to prevent this problem. The catheter used in this reported case is one of the least of the above safety features. For such lines to be used safely, it is necessary to ensure that throughout insertion the line is at all times both visible and held externally.

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