Cannulation of arterio-venous fistulae and grafts

Arterio-venous fistulae (AVF) and grafts can thrombose if cannulae, IV medication or fluids are introduced in the same arm. They may also be damaged by blood pressure cuffs and venepuncture. This problem is well recognised by renal units, but continues despite education.

The NPSA has identified a number of incidents reported by staff in the NHS to the national Reporting and Learning System (RLS) database. There is likely to be substantive under-reporting, but 55 relevant incidents were identified. Most related to cannulation of the fistula arm in error (41/55), but there were also a few cases of cannulation of a vein being protected for future fistula (7/55) and cannulation of a fistula itself in error (7/55).

Errors were made in all settings where cannulation might be expected to occur (paramedics, A&E, wards, theatres) and by a range of clinical staff (doctors, nurses, phlebotomists). The issue was not confined to junior trainees – anaesthetists, registrars and outreach sisters are all mentioned.

Three incidents resulted in thrombosis of the AVF, but most reports are made at the point the error was discovered (usually by renal staff when the patient attended for dialysis) and the eventual impact is unclear, although the tone of the reports suggests the risk of losing a fistula is real rather than theoretical. A further report describes haemorrhage controlled by pressure bandage, and loss of function in a hand (possibly temporary) following IV infusion.

The reports suggest that there is a need to increase awareness of the risk in staff outside renal specialist units and seek better barriers. At present these include writing ‘FISTULA’ on the skin, red tags, red bracelets, and a ‘nil by arm’ bracelet – but staff seeing these may not understand their meaning. Another barrier was asking the patient or relatives to remind staff not to use that arm, but reports suggest patients were easily over-ruled or were unable to communicate (e.g. under anaesthetic).

Action
We invite renal units to:
1. Share experience of local examples of best practice that have been successful in preventing these incidents
2. Continue to report any incidents through local risk management systems.

Please submit comments, solutions, and personal experience to:
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