A Shunt Drill

J B HAWKINS, E MOSS and W W W FORBES
East Birmingham Hospital and A W R E Aldermaston,
United Kingdom

Recessed within the tip of a 25 cm Teflon catheter is a high speed drill
(Figure 1) the power for which is supplied by a compressed-air driven rotor
which forms the handle. Down the hollow shank of the drill is fed heparinised
saline (from a Watson-Marlow MHRE heparin pump and lines), while broken-
up clot and saline are aspirated by continuous suction down the Teflon outer
catheter; the suction also serves to draw clot into the catheter tip where it
can be broken up by the drill. The outside diameter of the catheter is 1.9 mm
and it will pass through all but the smallest sizes of vessel tip.

This apparatus was designed for use with in-line (Ramirez) external
arteriovenous shunts, and although flexible (Figure 2) will not negotiate the
180° bend of the older pattern. It will not create new vessels where mis-
alignment, fibrosis or infection is the cause of the shunt failure, and it is
probably no more efficient than a simple nylon catheter in aspirating newly
formed clot. It is superior, however, in dealing with firm clot, and especi-
ally in coping with a 'ball-valve' arterial thrombus which cannot be aspirated
through the catheter tip.

The whole apparatus is shown with its trolley in Figure 3, and the drill in
use in Figure 4.