Development of replacement for the Foley indwelling urinary catheter

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The new ‘Flume’ design seeks to tackle the root causes of catheter associated infections and blockage typically associated with the 1930’s Foley design. Laboratory trials at Bristol Urological Institute (BUI) have demonstrated a clear superiority in time to blockage of Flume over the industry benchmarks from Bard and Rusch.

A COMPELLINGLY SIMPLE IDEA...

GP Dr. John Havard was prompted by his patient experience to envision a new catheter balloon.

‘...that when inflated would envelop the catheter tip and protect the sensitive bladder wall from coming down onto the hard tip or being sucked into the drainage ports’

FOLEY

‘that would create a channel to the drainage port(s) set low in the balloon, so that the bladder can drain fully and the smaller overall size is less likely to irritate and cause bladder spasms’

FLUME

REALISED BY NEW ENGINEERING...

Working with Arrotek Medical and business partner Roger Holmes delivered the working prototype for testing.

• Novel balloon fabrication
  Producing the patented asymmetric balloon design was the toughest engineering challenge – the answer came in folding an inflatable tube over the tip and fixing it on either side.

• New materials
  The inflatable tube design would have, however, extremely demanding material requirements; very thin with elasticity for inflation, plus good tensile strength and an ability to be bonded to the catheter shaft – a specialised elastomeric polymer was identified in combination with a highly lubricious hydrogel coating.

• Angled drainage ports
  Attention to laminar fluid flows (to increase throughput and discourage turbulence and encrustation) resulted in adopting angled drainage ports.

STRONGLY SUPPORTED

Benefited from MRC funded ‘Proof of Concept Award’ from Elizabeth Blackwell Institute

Over 60 Community Nurses looking after 1,500+ catheter patients, shared their experience

ON A PATH TO THE PATIENT...

• Successful laboratory trials
  BUI used a validated glass bladder model to measure time to blockage of Flume as 47% and 113% better than two benchmark ‘Foleys’ from Rusch and Bard.

• Paves the way towards seeking regulatory approval, full clinical trials and commercialisation, for the dual benefit of millions of patients and healthcare costs.

It’s time to change the catheter...
flumecatheter.com