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Defective anaesthetic breathing circuit

To the Editor:

The following experience emphasizes once again the need to always check the anaesthetic breathing circuit prior to induction of anaesthesia.

I recently encountered difficulty pressurizing a new Curity Bain Breathing Circuit after connecting it to the anaesthesia machine, closing the relief valve and starting the flow of oxygen. No gas would flow through the inner blue tube.

Further inspection of the circuit revealed a kink in the blue tube just beyond the external nipple, and inside the white tube. After cutting the external white tube, there was evidence of a double kink, allowing absolutely no gas flow (Figures 1 & 2).

The original Bain Circuits were designed so that the inner tube did not protrude beyond the external tube. This was felt to be unsafe, owing to the fact that the inner tube might become dislodged. However, in the above example, the circuit appeared normal externally, but excess tubing on the inside caused the kinking, and a possible disastrous situation.

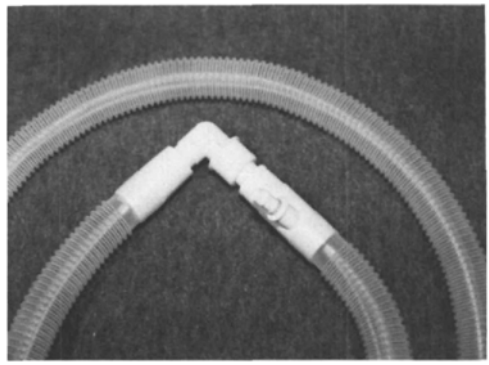

FIGURE 1 Intact circuit.

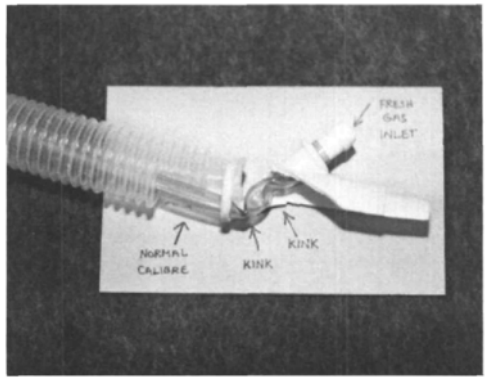

FIGURE 2 Kinked inner tubing.

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REPLY

Thank you for the opportunity to respond to the letter by Dr. Forrest. According to the letter, there was a "kink in the blue tube just beyond the external nipple and inside the white tube. After cutting the external white tube there was evidence of a double kink, allowing absolutely no gas flow."

- *Without examining the actual unit in question, it is difficult to determine the cause of the "kinking" problem.*
  Dr. Forrest was contacted. Unfortunately, he was unable to provide the product code or lot number of the product involved. Therefore a thorough follow-up investigation is not possible. He did state that it was the only time he had seen this defect.
- *Kendall's assembly procedure for the inner tube of the breathing circuit has been carefully formulated. There are steps in this procedure that should eliminate the possibility of any kinked inner tubing. At one point the inner tube is pulled back through the "Y" to seat the adapter conector into the "Y" port. This usually requires several pounds of pressure on the inner tube which should eliminate any kinks. In another step the tube is again pulled approximately two inches past the end of the corrugated tube to insert it into the straight adapter.*
- *A review of Kendall Complaint files showed no similar complaints.*
- *Appropriate Quality Assurance and Production personnel at our manufacturing facility were made aware of this complaint. They have been instructed to check the inner tubing for kinking on each circuit. This type of defect has never been detected during in-process or finished goods testing at Kendall.*

Finally, as Dr. Forrest pointed out, it is standard practice that all breathing circuits are checked prior to the induction of anaesthesia. This should prevent the inadvertent use of a questionable product.

Janice T. Piasecki
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