

FIG. 1. Materials needed to make Velcro® finger probe.

This modification allows for rapid application of the probe in all patients. In neonates and infants with fingers too small for standard application of the probe, the Velcro® strap arrangement facilitates application of the probe across the palm or foot.

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A New Method for Maintaining Body Temperature in Children

To the Editor:—We read with interest the letter from Drs. Rosen and Broadman¹ describing an ingenious method of warming intravenous solutions prior to their administration to small children.

At the Royal Manchester Children's Hospital we attempt to minimize heat loss in infants by maintaining operating room temperature at 24° C, using a heated water mattress at 39° C, and avoiding hyperventilation with cold gases. We always use a condenser/humidifier attached to the endotracheal tube. Intravenous fluids would normally be heated to 37° C for major procedures.

It is possible to reduce the incidence of hypothermia still further by increasing ambient temperature,² but operating conditions become uncomfortable for the surgeon. However, we have found that the same effect can be achieved by creating a microclimate of warm air around the infant using the Howorth Climator®.*

The apparatus is shown in use in figure 1. It consists of a thermostatically controlled fan heater and a length of wide-bore flexible hose. A special air mattress is also supplied, which we have found useful in operations on older children. The high-capacity heater is virtually silent in operation and can be placed unobtrusively beneath the operating table. Ambient air is drawn in through a 5u filter and heated. The air is then directed to the patient

via the flexible hose, at the end of which is a remote sensor to monitor the air temperature that is displayed digitally. By covering the head area with a Steri Drape®, the patient can be kept constantly in view while providing a closed microclimate. For operations about the head and neck warm air is directed over the legs and abdomen. The air temperature is set initially at 40° C, which is comfortable to the skin and will not produce a burn.

In order to demonstrate the effectiveness of the device, its use in five infants weighing less than 10 kg is described. Patient details are presented in table 1. Despite the usual methods of heat conservation described earlier, rectal temperature decreased in all five patients during induction of anesthesia and early surgery. Figure 2 shows the effect of the Climator® in reversing these changes. As can be seen a rise in temperature of 0.05–0.18° C/min occurred when the Climator® was set to deliver air at 40° C. Indeed,

TABLE 1. Patient Characteristics

Subject	Age	Weight (kg)	Operation
C.B.	2 months	3.2	Pulmonary artery banding
K.N.	3 months	5.4	Resection of aortic coarctation
C.E.	15 months	9.0	Posterior fossa exploration
C.S.	2 weeks	3.4	Emergency inguinal hernia repair
C.W.	8 months	7.9	Insertion of ventriculo-peritoneal shunt

* Howorth Air Engineering Limited, Surgicair Division, Lorne Street, Farnworth, Bolton, BL4 7LZ, England. (0204) 71131—Telex 635242 Howair G.

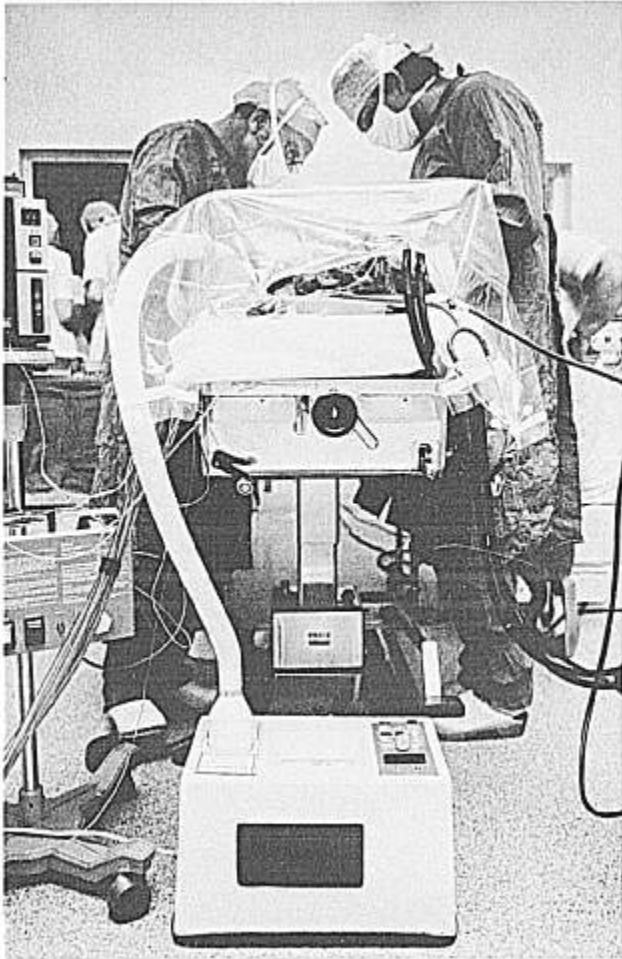


FIG. 1. Photograph of the Climator® showing the use of a Steri Drape® to provide a transparent but enclosed microclimate around the upper body during abdominal surgery.

the device was so effective that a degree of hyperthermia occurred in four patients. For this reason we would recommend the use of lower temperature settings for

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Aids for Easy Venous Cannulation

To the Editor:—I was intrigued to read the letter by Dr. Moore¹ concerning nitroglycerin and venous cannulation. I wish to bring to the attention of others two additional techniques for aiding an easy venous cannulation.

First, by employing a “reverse Esmarch” technique—that is, by wrapping an Esmarch’s bandage from above down—the veins in the hand can be distended so as to provide a good site for venous cannulation. Second, it is common for small-caliber cannula, *e.g.* a Hep-lock®, to be

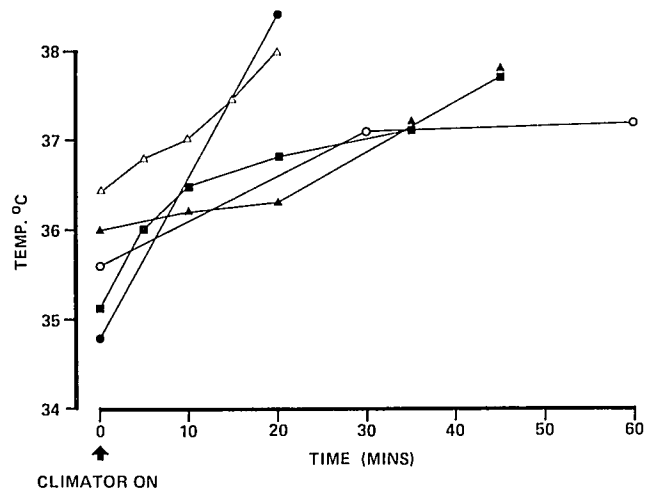


FIG. 2. Rectal temperature plotted against time following the use of the Climator® during surgery.

maintenance of normal body temperature. Although an increase in insensible losses might be expected when using the Climator®, this has not been a noticeable problem.

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in situ prior to surgery and a cannula of much larger bore to be necessary for the surgery. In this situation, by applying a tourniquet above the cannula site, and then, by injecting 30-40 ml of saline through the smaller cannula, sufficient venodilation is present for a large bore cannula to be placed without difficulty.

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