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An Adapter for the Dinamap® 1846 Cuff Connector

To the Editor:—Clinical introduction of non-invasive automatic blood pressure monitors^{1,2} has made blood pressure measurement in pediatric anesthesia easy and accurate.

We have been using the Dinamap® 1846 (Critikon) at our hospital. Two kinds of cuff connectors are needed with this machine, one for a small disposable cuff, "Neonatal Disposa-cuf," and one for a larger re-usable cuff, "Dura-cuf" (fig. 1). We have found that a disposable iv extension tube (Extension Tube, X2-50, Top®) eliminates the need to change cuff connectors when changing from one cuff to the other. The male adapter of the extension tube is connected to the distal end of the cuff connector for the "Disposa-cuf," and the "Dura-cuf" is then able to be connected to a female adapter of the extension tube.

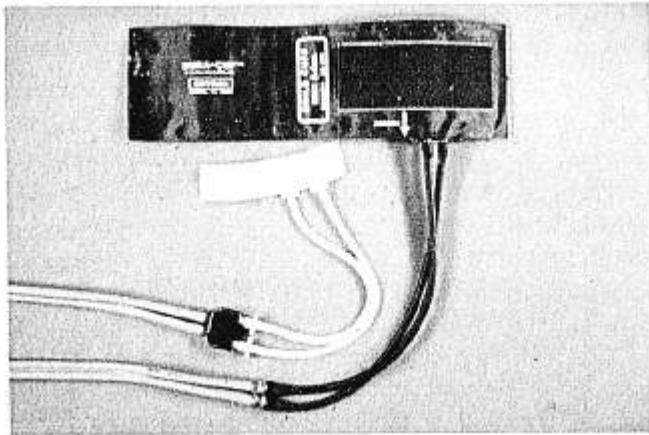


FIG. 1. "Neonatal Disposa-cuf" and its cuff connector, and "Dura-cuf" and its cuff connector.

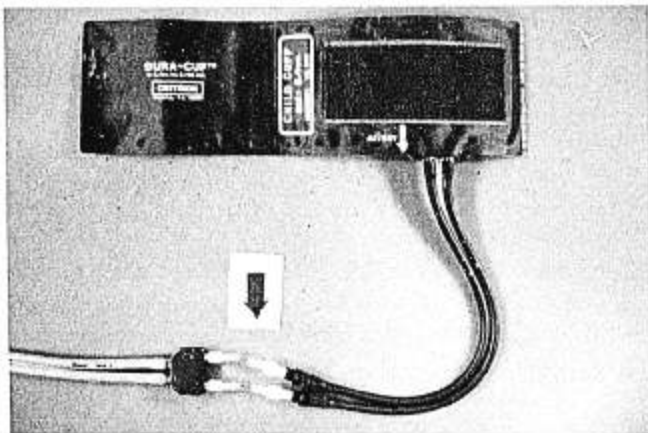


FIG. 2. "Dura-cuf" connected to the cuff connector for "Disposa-cuf" with an extension tube adapter.

TABLE 1. Patient 1

	Δ Systolic BP	Δ Diastolic BP
Standard set-up	3.9 ± 3.5	13.5 ± 4.9
Adapter set-up	2.3 ± 3.0	3.9 ± 2.1
Student's paired <i>t</i> test	P < 0.05	P < 0.01

ΔBP = Direct BP - Dinamap BP, mmHg, Mean ± S.D., N = 30

TABLE 2. Patient 2

	Δ Systolic BP	Δ Diastolic BP
Standard set-up	-10.1 ± 4.8	24.0 ± 10.5
Adapter set-up	-0.4 ± 4.7	15.5 ± 7.5
Student's paired <i>t</i> test	P < 0.01	P < 0.01

ΔBP = Direct BP - Dinamap BP, mmHg, Mean ± S.D., N = 30

In practice, the extension tube is cut short to minimize damping (fig. 2).

To verify the usefulness of the extension tube adapter, blood pressure was recorded every minute for 30 min from a catheter in the radial artery (Transducer Gould P-50), and from the same arm by a Dinamap®. We compared the differences between the data obtained from direct arterial measurement and the data obtained with a Dinamap® using a "Dura-cuf" connector and a "Dura-cuf" or a "Disposa-cuf" connector, an extension tube adapter, and a "Dura-cuf." Systolic and diastolic blood pressure were recorded on two patients, *i.e.*, patient 1: a 1-yr-old boy with normal hemodynamics (table 1); and patient 2: an 11-yr-old girl who required infusion of dopamine 30 $\mu\text{g} \cdot \text{kg}^{-1} \cdot \text{min}^{-1}$ and dobutamine 20 $\mu\text{g} \cdot \text{kg}^{-1} \cdot \text{min}^{-1}$ (table 2).

Thus, the adapter described above eliminates the need for changing connectors when changing cuffs, and does not impair the accuracy of blood pressures recorded with a Dinamap®.

MASAO YAMASHITA, M.D.
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