circular tunnel, but prevents him from removing portions of the diet in his paws and thereby contaminating the urine and feces.

The cage, with the feeder in position, is placed atop a 1-liter pyrex beaker in which the fecal pellets are collected. The urine is absorbed on an 18.5 cm piece of No. 42 Whatman ashless filter paper which is folded into a funnel shape, secured by 2 wire staples, and supported by the rim of the beaker. A 3 cm opening is cut in the bottom of the paper funnel through which the fecal pellets fall into the beaker. As this opening is situated beneath the central portion of the cage which is inaccessible to the animal, no urine can fall directly through it. Water is provided by means of a bottle attached to a ring stand and fitted with a pyrex tube which protrudes slightly through the wire mesh at the upper edge of the cage. As evidence that mice adapt to the confinement imposed by this cage, 10 adult mice were maintained in these units for 10 days on a daily intake of 3 g of synthetic diet without exhibiting a significant change in body weight.

The fecal pellets are collected daily after transferring the cage and paper funnel to another beaker. To replenish the diet, the 2 tension springs and the upper piece of wire mesh are removed, and the food is inserted into the feeder through the opening in the neck. Urine analysis entails either prior elution from the filter paper or, as in the case of some inorganic elements, ashing the paper along with the urine sample. Analysis of the paper funnels for Ca and Mg yielded values of 3.6 and 6.6 $\mu$g, respectively, amounts which are generally negligible in relation to the urinary excretion of these elements. A single paper funnel was observed to be capable of absorbing the urine excreted by a mouse over a period of about 5 days; larger quantities of urine required more frequent collections or the use of 3 mm paper.

*Summary.* A metabolism cage for mice or hamsters is described which affords a separation of urine and feces, and which prevents coprophagy.

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## Blood PTA (Factor XI) Levels Following Plasma Infusion.* (29070)

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Although plasma infusion is used for hemostasis in the hereditary hemorrhagic disorder PTA (Factor XI) deficiency, actual data on the effect of transfusion on the level of PTA factor is very limited(1) and the value of transfusion is thus in doubt. With the recent introduction of improved methods of testing, blood PTA levels following plasma infusion have been measured and correlated with the hemostatic effect.

*Methods.* PTA factor activity was measured by two methods described by Nossel (2):

1. The ability was tested of test plasma to correct the celite† partial thromboplastin time of congenitally PTA deficient plasma.

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† Celite 512 obtained from the Johns-Manville Co. Ltd., London S. E. 11.

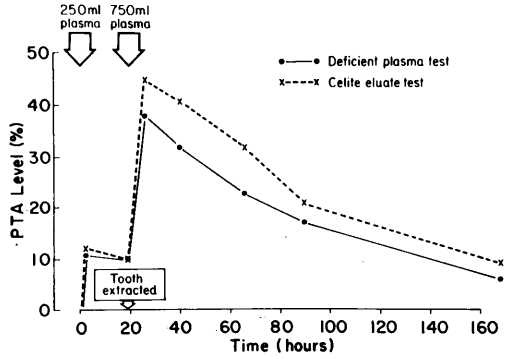


FIG. 1. Blood PTA levels after infusion of plasma. All figures are expressed as a percentage of the same normal plasma sample. The PTA activity of the 250 ml plasma dose was equivalent to 215 ml normal plasma by the deficient plasma test and to 250 ml normal plasma by the celite eluate test. The PTA activity of the 750 ml plasma dose was equivalent to 1350 ml normal plasma by the deficient plasma test and to 1200 ml by the celite eluate test.

This method is essentially similar to that reported by Rapaport *et al*(3). 2. The celite eluate test measured the ability of a celite eluate of test plasma to shorten the clotting time of normal plasma which had not been in contact with glass. The eluate was prepared by the method of Waaler(4). The test clotting system, carried out in silicone treated tubes at 37°C, consisted of 0.1 ml non-contact normal plasma; 0.1 ml chloroform extract of brain; 0.1 ml eluate; and 0.1 ml $CaCl_2$ 0.025 M.

*Results.* The subject was a 26-year-old Jewish woman who had previously bled so severely after extraction of a wisdom tooth that she required blood transfusions. At that time she was diagnosed as having PTA deficiency, with prolonged whole blood clotting time and abnormal prothrombin consumption. She required multiple transfusions on other occasions. On this admission, stored freshly frozen plasma was given prior to removal of a wisdom tooth. The gum was sutured after the extraction and no abnormal bleeding occurred.

As had been found earlier, the patient's blood contained no detectable PTA activity prior to transfusion. The amount of plasma infused and the blood levels of PTA factor are shown in Fig. 1. Slightly higher values were obtained with the celite eluate test than with the deficient plasma test; this is in accord with our general experience.

The patient's plasma volume was estimated from height and weight measurements to be 2,200-2,500 ml. Infusion of 250 ml plasma raised the PTA level 11-12% and infusion of 750 ml plasma 28-43%. These values are close to what might be expected from simple dilution of the infused plasma.

The rise in PTA level produced by these volumes of plasma is similar to the elevation of Factor VIII level usually observed in Factor VIII deficiency and considerably greater than the rise of Factor IX in Factor IX deficiency when the patients are given similar volumes of plasma (Biggs and Denson(5).

From Fig. 1 the half life of PTA factor activity in the circulation was estimated to be about 60 hours. This exceeds the half life of infused Factor VIII activity (about 14 hours) and of Factor IX activity (about 24 hours) reported by Biggs and Denson(5).

*Summary.* 1. Prophylactic infusion of stored freshly frozen plasma appears to be of hemostatic benefit for tooth extraction in PTA deficiency. 2. Data on the effect of infusion on the blood PTA level are presented. The rate of decline of the PTA level suggests a half life of PTA factor in the circulation of approximately 60 hours.

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