

infancy and childhood, thrombocytosis is seen in connection with various rare diseases (Addiego *et al.*, 1974) of which iron deficiency and vitamin E deficiency are likely to be the most common causes in preterm babies. These results show that there were relatively high values at 2 weeks in the presence of ample iron stores. No difference was found between iron-supplemented and nonsupplemented infants. Nor were high platelet values associated with low Hb levels, except at 2 weeks. Accordingly there is no reason to suspect that a lack of iron in these infants individually, or as a group, would have resulted in thrombocytosis. Vitamin E deficiency as a cause is also unlikely as the infants were supplemented with vitamin E, and Hb levels and reticulocyte counts were similar whether their platelet counts were high or low.

The data suggest that thrombocytosis is a physiological phenomenon in preterm infants during the first 6 months of life. The increase in number might be compensatory to a decreased functional capacity shown in term infants (Corby and Schulman, 1971) and further suggests that values $<160 \times 10^9/l$ are evidence of thrombocytopenia.

This study was supported by grants from the Foundation for Paediatric Research in Finland, and by National Institutes of Health Grant No. AM HD 13897 and National Foundation, March of Dimes Grant No. 6-81.

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Aortography in infantile coarctation

A simple and effective technique

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SUMMARY A new and simple technique is described which clearly defines the aortic anatomy in infantile coarctation. The technique greatly helps to select those neonates whose lives can be salvaged by early surgery. There have been no serious adverse effects.

Coarctation in the neonate when associated with an interventricular septal defect or patent ductus

arteriosus is a disorder which carries an extremely high mortality, in the region of 80 to 90% in the first year of life. It is usually associated with hypoplasia of the distal aortic arch and may be regarded as the mildest expression of the hypoplastic left heart syndrome.

In some cases surgery in the first months of life to relieve the coarctation and close a patent ductus arteriosus can reduce the left ventricular pressure

and thus the left-to-right shunt through the residual interventricular septal defect to a tolerable level. The infant's outlook then becomes that of an uncomplicated ventricular septal defect which may even proceed to spontaneous closure. The crucial factor in improving the survival rate for infants with infantile coarctation is the selection of those infants who will benefit from early surgery. This requires adequate definition of the vascular anatomy in the area of the coarctation and has until now required arteriotomy with its inherent risk to subsequent growth of that limb, thrombosis, and many other complications. The large left-to-right shunt through an intraventricular septal defect means that left ventriculography usually provides inadequate definition of this area (Gyepes and Vincent, 1974).

Method

The use of a balloon angi catheter floated antegradely from the pulmonary artery through the patent ductus arteriosus into the aorta permits the affected segment to be easily demonstrated (Figure). After inflating the balloon with carbon dioxide or dilute contrast medium so as to occlude the descending aorta completely, contrast is immediately injected into the aorta through the injection port

proximal to the balloon and retrograde filling of the aortic arch allows cineangiograms of high quality to be obtained (Denham, 1978).

Discussion

So far this technique has been used in 12 infants and excellent angiograms have been obtained in each. There have been no adverse effects apart from transient hypertension such as often occurs after any angiogram. The precaution should be taken of using a nontoxic medium for inflation in case the balloon ruptures, and aortic occlusion should be carried out in the shortest possible time. The duration of aortic occlusion may be kept shorter than 10 seconds if carbon dioxide is used to inflate the balloon and if the angiographic injection is made by hand. Connection of the catheter to a mechanical injector and the use of dilute contrast medium for inflation both prolong the time of aortic occlusion, and for these reasons carbon dioxide inflation and manual injection are preferred.

The catheters so far used for this procedure are: No. 5 French and No. 6 French Berman Angiographic balloon catheters manufactured by American Catheter Corporation N.J. The diameter of the balloon at maximum inflation is 10 and 12 mm and

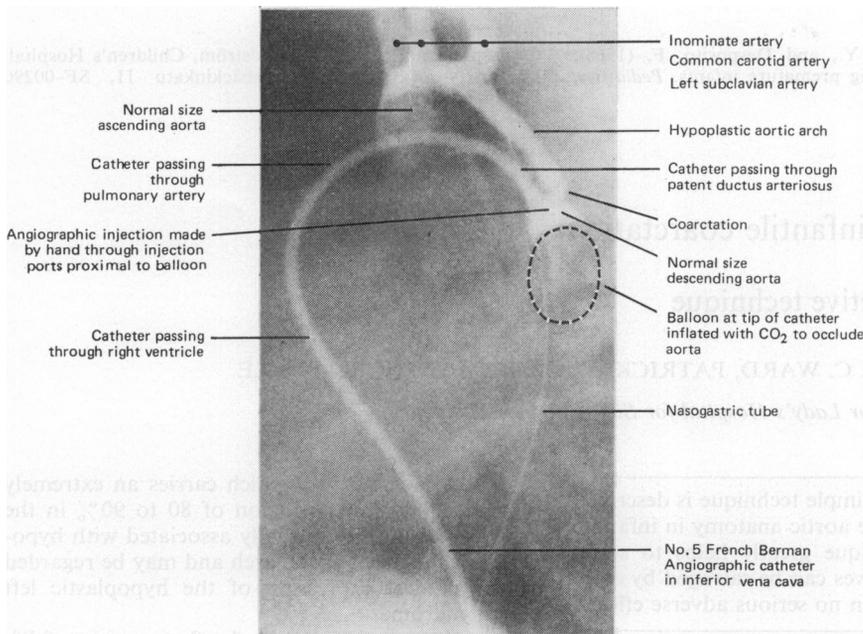


Figure *Left lateral projection of 2.5 kg one-month-old infant.*

these catheters can therefore easily occlude the neonatal descending aorta, the internal diameter of which is 5 to 6 mm (Scammon, 1959).

This technique could be applied in other anatomic cases in which angiograms are difficult to obtain; it is particularly suitable for the neonate.

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Frequency and weight of normal stools in infancy

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SUMMARY These data give a guide to the range of stool weights and their frequency at different ages in infancy. The constancy of stool water content is emphasised.

Burkitt (1976) complained that there are no data on stool weights in normal infants. We have therefore undertaken to provide data on the variation in frequency, weight, and water content of the stools for a group of normal babies and young children fed on cows' milk formulae and mixed diets. The much looser stools of breast-fed infants prevented their inclusion in the study, because it was not possible to prevent spillage.

Materials and methods

Infants. 55 healthy infants aged between 3 days and 2 years were studied, after obtaining parental co-operation. 33 of the infants were in hospital during the study; 16 of these were aged 3-6 days (normal neonates) and the remaining 17 were in hospital for social reasons. At least 3 days were allowed for these infants to become accustomed to the hospital before collections began. The remaining 22 babies were studied in their homes. The neonates and infants under 4 months were fed *ad libitum* on proprietary milk formulae, and older infants were on a mixed diet of cereals and formula milk or unmodified cows' milk. Infants who were unwell or who had gastrointestinal symptoms were excluded.

Stool collections. Stools were collected in rayon napkin liners for 3-9 days, median 3.5. A series of *in vitro* experiments was carried out to determine whether stools collected in this way absorbed water from wet napkins or released water into dry napkins:

Effect of wet napkins

12 random stool samples weighing, with their liners, between 8.6 and 46.1 g were incubated for 2 hours in disposable napkins which had been soaked in normal saline, whose osmolality approximates that of urine. The stools and liners were then reweighed. Mean weight of stools and liners before incubation was 21.2 g, SD 11.0, and after incubation 21.0 g, SD 10.0. Mean change in stool and liner weight was -0.6%, which was not significant.

Effect of dry napkins

12 further random stool samples in liners were incubated for 2 hours in dry disposable napkins. Mean weight of stools and liners before incubation was 18.5 g, SD 8.2, and after incubation 18.1 g, SD 8.1. Mean change in stool and liner weight was -2.7%, again not significant. These findings were confirmed by detecting no significant increase in postdefecation napkin weight when stools were collected in napkin liners in infants wearing urine collection bags.

All stool collections were therefore made by this method, which proved reliable provided that the liners were properly fitted, and enabled stools to be collected at home over reasonable periods of time. At each napkin change, stool adhering to the buttocks was wiped off with the edge of the liner, and the stool and liner were then sealed in plastic bags, labelled with date and time, and frozen. Wet stool weights were subsequently measured in the laboratory, and the stools were freeze dried to determine water content.

Results

The results are shown in the Table, which divides the children arbitrarily into four age ranges. A total of