Screening for metachromatic leucodystrophy

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Lake (1965) proposed a diagnostic test for metachromatic leucodystrophy based on the detection of sulphatides within renal epithelial cells in urinary deposits. These sulphatides react with certain dyes to give a brown metachromasia.

The urinary deposit often contains much debris, consisting mainly of bacteria and phosphates desired and this obscures the few cells that may be present. The method described below overcomes these difficulties.

**REAGENTS AND MATERIALS**

1 1% aqueous solution of cresyl fast violet (Merck) the pH adjusted to 3.5-3.6 with acetic acid.
2 Hemming filter containing Whatman No. 41 filter paper.
3 Glycerin albumin.

**PROCEDURE**

The urine, which must be fresh and should not be an early morning specimen, is centrifuged at about 1,500 r.p.m. for five minutes. Most of the supernatant is decanted and the sediment resuspended in the remaining

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**REFERENCES**

supernatant. The suspension is transferred to a bijou bottle connected to the Hemming’s filter containing a Whatman no. 41 filter paper. The bottles with the filter are centrifuged at about 2,000 r.p.m. for five minutes. This retains particles of diameter greater than 5 μ, including epithelial cells, but allows bacteria and smaller debris, e.g., phosphates, to pass through.

Glycerin albumin is spread thickly on two 3 × 1 in. slides. The moist filter paper is removed from the Hemming’s filter and an imprint made on the first slide. The imprinted material is relatively fluid and is mixed by means of a slide end with the glycerin albumin on the slide. The mixture is drawn down with the slide edge into several parallel thick transverse lines, to make scanning for cells easier. The filter paper is then placed firmly on the second slide and the imprinted area ringed on the reverse of the slide with a diamond. The filter paper is then discarded.

The slides are fixed in formalin vapour at 60°C for one hour, washed in water, and stained at room temperature for 10 minutes with cresyl fast violet. The smears are finally washed in water and mounted in glycerine jelly.

This technique removes much of the debris normally found even in a fresh urine. It is possible to use a cellulose acetate filter in place of the Whatman no. 41, but being a finer filter much debris is retained.

This technique may have some value in the examination of cells in urine deposits for malignancy.

REFERENCE


Glove box system for micro-determination of protein-bound iodine in children’s blood

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The use of blood samples from pricked fingers or heels is essential in paediatric practice. In central London, a commensurate reduction in the scale of quantities necessary for the well-established procedure for estimating protein-bound iodine (P.B.I.) of Foss, Hankes, and Van Slyke (1960) resulted only in excessive atmospheric contamination. To overcome this the procedure is now carried out in the glove box system to be described.

APPARATUS

The glove box, shown in the figure, consists of a Dexion-supported table and working chamber. The rear wall of the system is made of block-board to provide strength. The left hand wall of asbestos carries a central hole and short sheet iron tunnel connexion to the muffle furnace. The furnace door operates without hindrance and the electrical controls were detached and reinstalled below the table.

REFERENCE