

Effect of Refrigeration on Mantoux Test Result

Tuberculosis is a common disease in India. Mantoux test is used in children for diagnosis of tuberculosis. Seibert first prepared the purified protein derivative (PPD) from heat-concentrated old tuberculin by precipitating protein initially with trichloroacetic acid(1). PPD when diluted is adsorbed by glass and plastic surfaces. To minimize this a small amount of detergent. Tween-80, is added to the diluent of PPD and solution is refrigerated(2). However, the facility of refrigeration is either not available or inadequate in most of the rural areas. I tried to investigate whether the results of Mantoux testing were affected by keeping the Mantoux vials at room temperature for variable periods.

I prospectively studied 100 patients with complaints related to tuberculosis. The Mantoux tests were performed in each patient by intracutaneous injection of 0.1 ml of PPD containing 5 TU on the volar surface of the forearm(3). Each patient was given two injections of PPD, one with the refrigerated vial and other from the vial at room temperature. Thereafter the cases were assigned at random to one of the four groups, which were categorized on the basis of time for which the vials were kept outside the refrigerator. In group 1, 2, 3, and 4 the vi-

als were kept 24,48,72, and 96 h at room temperature, respectively.

Table I shows the mean values of Mantoux test of the refrigerated vial and the vial at room temperature. On comparing the mean values obtained by vials at room temperature with the refrigerated vials, the differences were not significant.

TABLE I—Mean Values of Mantoux Test (mm)

Groups	Refrigerated vial	Vials at room temperature
Group 1 (n=35)	14 ± 3	12 ± 2
Group 2 (n=20)	12 ± 2	11 ± 1
Group 3 (n=14)	14 ± 1	13 ± 3
Group 4 (n=30)	11 ± 1	12 ± 2

Our results suggest that time honored practice of keeping the Mantoux test vials in refrigeration need not be over-emphasized. The results of Mantoux tests may be useful in the rural areas even without refrigeration. However, the present data pertains to non-refrigeration upto 96 h only and requires further validation under rigorous control conditions.

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Laxative Induced Hypoalbuminemia

Care of infant in the traditional Hindu society still hinges on the whims and fancies of grandmother. Given her educational background and knowledge, her dominating attitude leads to abuse of various substances. An infant with hypoalbuminemia resulting from chronic castor oil ingestion is reported to highlight abnormal rearing practices.

A one and a half month-old boy was hospitalised with edema of hands and feet, oliguria, and diarrhea of one week duration. He was born after a full-term normal delivery and the immediate postnatal period was uneventful. Breast feeding was initiated immediately after birth and continued. No other positive history was elicited at this stage. Examination revealed normal growth parameters, pallor, moderate dehydration and anasarca. Systemic examination was normal. Investigations revealed the hemoglobin level of 10.8 g/dl, microcytic hypochromic anemia, serum proteins 3.6 g/dl, albumin 1.5 g/dl, and globulin 2.1 g/dl. The stool examination was normal

and the urine was negative for proteinuria.

At this stage no definite cause could be attributed for the hypoalbuminemia. The history was retaken from the parents and grandmother. On repeated questioning, the grandmother admitted that she used to administer castor oil (about 10 ml) daily from the fifth day of birth. The resultant diarrhea was managed with different medications.

The patient was initially managed for diarrhea and dehydration. Subsequently, 50 ml of fresh blood was transfused. Over the next two weeks, the patient showed improvement in the form of disappearance of edema, increased serum albumin levels, and normal bowel function. The infant was discharged after providing corrective health education to the parents and the grandmother.

Traditionally it is a common practice to administer a variety of artificial feeds to the newborn infant. This includes honey, *janam gutti*, gripe water, and cathartics like castor oil. This practice is linked to the misconception about the nature of stools in a breast-fed infant and attributing them to indigestion.

Hypoalbuminemia in the absence of hepatic, renal, and nutritional deficiency may indicate protein malabsorption or protein losing gastroenteropathy. Abuse of laxatives like castor oil can cause protein losing gastroenteropathy(1). Castor oil is hydrolyzed in the intestine by pancreatic lipase to glycerol and ricinoleic acid. Ricinoleic acid acts as a mild irritant and causes purgation. It is also known to interfere with absorption of proteins, resulting in protein losing enteropathy(2).

In the quest for achieving universal breast feeding, it is essential to provide health education to mothers and dissuade them from administering harmful substances to children.

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Nevus Flammeus in Tuberous Sclerosis

Nearly 90% of the patients with tuberous sclerosis have skin involvement in the form of hypopigmented macules (ash leaf macules), adenoma sebaceum, shagreen patch, subungual and/or periungual fibromas, cafe au-lait spots, forehead fibrous plaques and facial angiofibromas(1). We report a case of tuberous sclerosis with nevus flammeus, an hitherto unreported association.

A 10-month-old boy, born of a non-consanguineous marriage was brought with multiple episodes of generalised tonic-clonic convulsions, which started

as left partial seizures at 7 months of age. On examination the child had normal anthropometric measurements, vital parameters and milestones. He had a nevus flammeus in the right submandibular region, 6 cm by 4 cm macular reddish brown patch with irregular margins (*Fig. 1*). There were no other skin lesions of tuberous sclerosis. There were no focal neurological deficits. Systemic examination was within normal limits. CT scan of the brain revealed multiple hyperdense lesions (50-150 HU) in the paraventricular wall of the left frontal horn, body of right lateral ventricle and in deep parietal cerebral hemisphere with contrast enhancement. Fundus examination revealed bilateral multiple astrocytomas. The CT scan of the abdomen showed multiple