

## Correspondence

### Deficiency of argyrophilic neurones in the myenteric plexus as cause of intestinal obstruction

Sir,

In the November issue of the *Archives* (1976, 51, 837), Tanner and co-workers published their article on the distribution of argyrophilic neurones in the myenteric plexus in cases of functional intestinal obstruction. The data concerning autonomic nerve cells reported in this study are dependent upon the silver procedure and it is unfortunate that the authors have failed to state, other than in a legend, which method was used in their investigation. Since the techniques which use silver salts to demonstrate autonomic nerves are prone to technical failure and are notorious in producing nonspecific staining of other tissue elements, such as collagen and elastic fibres, a detailed description of the methodology (and an indication of control techniques) must be provided if the results reported by these workers are to be critically assessed.

Concerning the functional implications which these workers have proposed for their findings, it would have been of value to have applied one of the relatively specific neurohistochemical techniques to the material at their disposal. The latter methods provide results whose functional implications are far more significant than those which can be derived using silver impregnation techniques alone. In our view, more evidence than that which is presented in this paper must be provided before the authors' claim of a deficiency of intramural neurones causing functional intestinal obstruction can be accepted.

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Dr Tanner and associates comment:

The methodology of the silver technique was not given in detail because it would have taken up considerable space and this was not considered appropriate in a clinical journal. However, a reference should have been given and we apologize for its omission. It is Schofield, G. C., (1960), *Brain*, 83, 490. We do not agree that silver methods are prone to failure, and in competent hands they produce quite consistent results. Better results are obtained by keeping the material in the hands of a single experienced technician than by putting it through the routine laboratory. This is true of many neuropathological techniques which require a lot of attention to

detail—not only silver stains. The problems of connective tissue staining are minimal when viewed under the microscope or reproduced in colour, though black and white photography is less satisfactory, because the dark brown and black tend to become indistinguishable.

We entirely agree that it would be highly desirable to study the gut in this syndrome histochemically, as well as pharmacologically and electrophysiologically. Indeed, we hope that by drawing attention to this problem, other cases will be recognized early, and the opportunity taken to examine surgical specimens of the bowel thoroughly by all relevant techniques. Unfortunately, only formalin-fixed material was available from our cases. Nevertheless, in a syndrome in which peristalsis is grossly and persistently abnormal, and in which careful and controlled study fails to show neurones which stain with silver, it does seem reasonable to attribute the defective function to the morphological abnormality.

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### Decreased reverse triiodothyronine (RT<sub>3</sub>) concentration in amniotic fluid in fetal hypothyroidism

Sir,

It has been hypothesized that a reduced concentration of RT<sub>3</sub> in the amniotic fluid may be the best biochemical indicator for antenatal detection of congenital hypothyroidism (Chopra and Crandall, 1975; Fisher, 1975; Meinhold *et al.*, 1976). To our knowledge this hypothesis has not yet been verified because congenital hypothyroidism is a fairly rare and usually unforeseeable disease. However, we recently showed that temporary hypothyroidism in the newborn could result from amniotography (AFG) performed on the mother at the end of pregnancy (Rodesch *et al.*, 1976). This form of hypothyroidism was attributed to blocking of the fetal thyroid by excess iodide (Vagenakis and Braverman, 1975). Such a situation seemed to afford suitable conditions for studying RT<sub>3</sub> in the amniotic fluid for the purpose of antenatal detection of hypothyroidism.

We determined the concentration of RT<sub>3</sub> and iodide in the amniotic fluid before AFG and several times in the hours and days after the examination in 4 pregnant women. The concentration of RT<sub>3</sub> was determined by specific radioimmunoassay without extraction, by the technique used for serum (Vigneri *et al.*, unpublished data) adapted for amniotic fluid. All the measurements were taken in triplicate during each assay; the intra-assay variation coefficient was 4%. Iodide was determined by the method of Barker *et al.* (1951).