

## **Pointers**

**Commission on Industrial Relations:** Proposes that A.S.T.M.S. should represent non-clinical M.R.C. staff (p. 574).

**Mesothelioma in Scotland:** A 17-year retrospective study confirmed that the incidence of the disease in Scotland is similar to that in other parts of Britain (p. 575).

**Isoprenaline-phenylephrine Inhalant:** Assessment in 23 patients showed this mixture to have a satisfactory bronchodilator effect and to be safe for severely hypoxic patients (p. 579).

**Hypercalciuria:** Provocative tests of parathyroid activity in 19 patients with hypercalciuria produced hypercalcaemia in eight; five of the eight were surgically explored, and four had parathyroid adenomas (p. 582).

**Atherosclerosis and Carbohydrate Metabolism:** A study of 51 men with atherosclerosis suggests that hyperinsulinaemia and hyperglycaemia may have a role in its aetiology (p. 586).

**Urinary Tract Dilatation and the "Pill":** Radiological evidence suggests that oral contraceptives may lead to overdilatation of the upper renal tract (p. 588).

**Ancrod for Haemodialysis:** Study of its use in place of heparin (p. 591).

**Fingerprints in Coeliac Disease:** Loss of fingerprint patterns found in 73 patients, with correlation between ridge atrophy and the patient's clinical state (p. 594).

**Renal Tubular Acidosis:** Appears to be associated with fibrosing alveolitis. It is suggested that the renal and pulmonary defects may be part of an immunological systemic disorder (p. 596).

**Rheumatoid Arthritis:** The aetiology, medical management, and surgical treatment described in three Clinical Progress articles (pp. 601-609).

**Psychiatric Outpatient Teaching:** A small study of patient attitudes to teaching in psychiatric outpatients (p. 613).

**Personal View:** From Lesotho in Southern Africa (p. 616).

**Correspondence:** Letters on abortions under the N.H.S., oral antidiabetic drugs, analgesic nephropathy, Health Service's financing, vasectomy, and medical manpower (pp. 617-624).

**Expert Witnesses:** New recommendations (p. 627).

**Supplement:** Proceedings of Council (p. 45); General Medical Services Committee report (p. 49); G.M.C. president's address (p. 53).

## **Placental Insufficiency**

Of recent years great strides have been taken in understanding placental function, though there is still much to learn. Virtually nothing is yet known in the human of the excretory function. Study of it has produced nothing of clinical value, since the excretory products of the fetus disappear with the waste products of the mother. Similarly the placenta's respiratory function in pregnancy remains largely unknown, but an immense fillip to perinatal medicine came when E. Saling<sup>1</sup> showed that fetal blood in utero can be examined once the patient is in labour and the membranes are ruptured. Examination of samples of fetal scalp blood are now routine in specialist units when fetal distress becomes apparent from the well-known signs of changes in fetal heart rate and the passing of meconium when the head presents.<sup>2</sup> At the end of pregnancy the presence of meconium in the liquor before the onset of labour can be detected by passing an amnioscope through the cervix to see the forewaters. This procedure can be of value when the fetus may be thought to be at special risk because of conditions such as pre-eclampsia, hypertension, or postmaturity. The detection of meconium in the liquor may hasten a decision to induce labour, since it indicates the probability of fetal anoxia.<sup>3</sup>

During pregnancy it is the nutritional function of the placenta which holds the front of the stage. Clinically the rate of growth of the uterine fundus in the earlier months of pregnancy and later estimates of the weight and size of the fetus help to show whether all is progressing well or not. In particular, efforts are nowadays directed to discovering the "small-for-dates" fetus, for such a baby is being starved in utero. Moreover, in such cases it is probable that the respiratory reserve of the placenta is impaired, so that though anoxia may not be a feature of the pregnancy it may well become so during the uterine contractions of labour. But the clinical recognition of the small-for-dates fetus is notoriously difficult. Largely dependent on clinical judgement, it is therefore often inaccurate, as shown by the weight of the baby when it is born. Therefore anything which will help in the more accurate diagnosis of the small-for-dates fetus is welcome. It is in this light that a recent report by M. G. Elder and colleagues<sup>4</sup> is to be seen.

These authors have found a correlation between static and falling weight gain of the mother from the 34th week to term and the birth of a dysmature baby. Moreover, they consider that measurements of the girth at the umbilicus add something to the accuracy of diagnosis, though this linear measurement is not statistically significant when considered alone. Perhaps the most useful part of their investigation showed that if a clinical diagnosis of a small-for-dates fetus is made, then retardation of intrauterine growth is unlikely to be the cause if the maternal weight is increasing. Without expecting too much of careful measurements of maternal weight and girth, especially in the last six weeks of pregnancy, it would seem to be worthwhile to make them and to check on the methods

in each clinic to see that they are standardized. In too many clinics women are weighed just as they come in off the street. This is not good enough to be used in deciding whether a given woman's weight is static or falling.

But gain or loss of weight, girth, and clinical suspicion based on palpation are not enough to be sure of the diagnosis of small-for-dates fetus. The suspicion is best checked by some test of placental function. The most widely used are those based on the quantitative excretion in the urine of oestriol<sup>5</sup> or pregnanediol<sup>6</sup> or both. It is assumed that the endocrine function runs parallel with the nutritional and respiratory functions of the placenta. This seems to be largely true, and the tests are of undoubted help in prognosis and in guiding the clinician on the best time for delivery of the fetus.

An especially interesting test, not yet widely used, is that of measuring the uptake of radioactive selenomethionine.<sup>7</sup> This isotope-labelled amino-acid is used in a direct attempt to measure the nutritional state of the fetus. In 50 cases the test identified the four babies with retardation of intrauterine growth. Another direct measurement of the fetus is that of the biparietal diameter by means of ultrasound.<sup>8</sup> The mean and standard deviations of the biparietal diameter with gestational age are now known, and provided a series of readings can be obtained in the individual case they can be used either to estimate maturity or, if the gestational age is known with fair accuracy, to detect retardation of growth. And this pinpoints one of the major clinical difficulties. These

tests all require to be interpreted against a known length of pregnancy. When the woman is not sure of her dates the clinical problem becomes almost insuperable, for estimates of gestational age based on fundal height and the first fetal movements are very inexact.

In practice clinical suspicion of retarded intrauterine growth must come from fundal height, estimated weight of the fetus, failing gain in maternal weight, failing rate of girth increase, and possibly from an estimated small amount of liquor amnii. The suspicion of placental insufficiency should be checked by special tests, of which oestriol and pregnanediol excretions are the most widely available. Other tests—not yet fully evaluated—are those for the quantities of human placental lactogen<sup>9</sup> in urine and blood and for heat-stable alkaline phosphatase in the serum.<sup>10</sup>

- <sup>1</sup> Saling, E., *Zeitschrift für Geburtshilfe und Gynäkologie*, 1963, 161, 262.
- <sup>2</sup> Beard, R. W., Morris, E. D., and Clayton, S. G., *Journal of Obstetrics and Gynaecology of the British Commonwealth*, 1967, 74, 812.
- <sup>3</sup> Henry, G. R., *Journal of Obstetrics and Gynaecology of the British Commonwealth*, 1969, 76, 790.
- <sup>4</sup> Elder, M. G., Burton, E. R., Gordon, H., Hawkins, D. F., and Browne, J. C. M., *Journal of Obstetrics and Gynaecology of the British Commonwealth*, 1970, 77, 481.
- <sup>5</sup> Heys, R. F., Scott, J. S., Oakey, R. E., and Stitch, S. R., *Lancet*, 1968, 1, 328.
- <sup>6</sup> Brush, M. G., Taylor, R. W., and Maxwell, R., *Journal of Obstetrics and Gynaecology of the British Commonwealth*, 1966, 73, 954.
- <sup>7</sup> Garrow, J. S., and Douglas, C. P., *Journal of Obstetrics and Gynaecology of the British Commonwealth*, 1969, 75, 1034.
- <sup>8</sup> Campbell, S., *Journal of Obstetrics and Gynaecology of the British Commonwealth*, 1969, 76, 603.
- <sup>9</sup> *British Medical Journal*, 1969, 3, 668.
- <sup>10</sup> Curzen, P., and Southcombe, C., *Journal of Obstetrics and Gynaecology of the British Commonwealth*, 1970, 77, 97.

## Whooping-cough due to Adenovirus

Adenoviruses infect both respiratory and alimentary tracts, but their medical importance is largely due to the respiratory diseases they cause. With the possible exceptions of mesenteric adenitis and intussusception,<sup>1</sup> adenoviruses rarely seem to cause gastrointestinal symptoms.

Adenoviruses are endemic in the community, though the frequency with which they are found varies from time to time. Of the 31 serological types of adenovirus, types 1, 2, 3, and 5 are the most common endemic viruses.<sup>2</sup> Despite their ubiquity they cause only a small proportion (probably less than 5%)<sup>3</sup> of the respiratory infections among the general population. The infections are usually mild, and the most common syndromes are sore throat and febrile cold.<sup>4</sup> But these viruses can also cause pneumonia,<sup>5</sup> generally in young children and due to types 3 and 7.<sup>6</sup> It now seems that they also cause a disease which is clinically indistinguishable from whooping-cough. An association between adenoviruses and a pertussis-like syndrome has been described previously,<sup>5 7-9</sup> and this has now been confirmed in a detailed report on 13 children with clinical pertussis which was apparently due to adenovirus infection.<sup>10</sup> The cases were sporadic and were seen over a period of 2½ years. Twelve of the 13 children were under 3 years old, and 11 required hospital treatment. The children had a relatively prolonged respiratory illness with recurrent paroxysms of coughing and lymphocytosis; six of them had a typical whoop. In reports of this kind, the results of laboratory investigations are crucial, because healthy children sometimes excrete adenovirus and because *Bordetella pertussis* is not the

easiest of bacteria to culture in the laboratory. In fact all except two of the children were excreting adenoviruses at the time of illness and these were predominantly of the endemic types 1, 2, 3, and 5. Eight children had serological evidence of recent infection with adenovirus. In contrast the rate of adenovirus isolation among a matched group of children in hospital with other forms of respiratory disease over the same period of time varied from 2 to 4%. Attempts to isolate *B. pertussis* were negative in all cases, as were serological tests for *B. pertussis* with the exception of one vaccinated child. There is therefore good evidence that adenoviruses and not *B. pertussis* had caused the children's disease.

Adenovirus whooping-cough is certainly less common than the usual bacterial form of the disease. But this report is of considerable interest in emphasizing again the variety of different respiratory syndromes which may be associated with adenoviruses. Whooping-cough due to adenoviruses might also explain an occasional case of the disease in a child who has been fully immunized with pertussis vaccine.

- <sup>1</sup> Potter, C. W., *Modern Trends in Medical Virology*, 1967, 1, 162.
- <sup>2</sup> Vargosko, A. J., et al., *Bacteriological Reviews*, 1965, 29, 487.
- <sup>3</sup> Ginsberg, H. S., and Dingle, J. H., in *Viral and Rickettsial Infections of Man*, ed. F. L. Horsfall and I. Tamm, 4th edn., p. 881. Philadelphia, Lippincott, 1965.
- <sup>4</sup> M.R.C. Working Party on Acute Respiratory Virus Infections, *British Medical Journal*, 1965, 2, 319.
- <sup>5</sup> Chany, C., et al., *American Journal of Hygiene*, 1958, 67, 367.
- <sup>6</sup> Tyrell, D. A. J., *Common Colds and Related Diseases*, p. 127. London, Arnold, 1965.
- <sup>7</sup> Farber, S., and Vawter, G. F., *Journal of Pediatrics*, 1961, 58, 876.
- <sup>8</sup> Olson, L. C., Miller, G., and Hanshaw, J. B., *Lancet*, 1964, 1, 200.
- <sup>9</sup> Collier, A. M., Connor, J. D., and Irving, W. R., *Journal of Pediatrics*, 1966, 69, 1073.
- <sup>10</sup> Connor, J. D., *New England Journal of Medicine*, 1970, 283, 390.