

- <sup>1</sup> Van Vliet PD, Burchell HB, Titus JL. Focal myocarditis associated with pheochromocytoma. *N Engl J Med* 1966;**274**:1102-8.
- <sup>2</sup> Pelkonen R, Pitkanen E. Unusual electrocardiographic changes in pheochromocytoma. *Acta Med Scand* 1963;**173**:41-4.
- <sup>3</sup> Radtke WE, Kazmier FJ, Rutherford BD, Sheps SG. Cardiovascular complications of pheochromocytoma crisis. *Am J Cardiol* 1975;**35**:701-5.
- <sup>4</sup> Hausmann VM, Getzowa S. Adenoma of organ of Zuckerkandl. *Schweiz Med Woch* 1922;**52**:889-92.

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## Measles serology in children with a history of measles in early life

Since the introduction of routine measles vaccination in 1968 the yearly uptake of the vaccine in England and Wales has not exceeded 54%.<sup>1</sup> The failure to protect against this disease is reflected in the 139 485 cases reported to the Office of Population Censuses and Surveys in 1980.<sup>2</sup>

In many children who were admitted to a north London district hospital and in whom there was a history of measles before the age of 12 months we found that the duration of the rash was often stated to be only two or three days and a history of cough frequently absent or very mild. Hence we were led to question the diagnosis of measles in these children. Since a history of measles is one of the reasons for withholding measles vaccine, we decided to measure the serum measles antibody titres in children with such a history.

### Patients, methods, and results

With informed consent in each case, 80 children aged 6-36 months who were seen at St Ann's General Hospital, London, after April 1980 were examined serologically for measles haemagglutination inhibition antibodies. The age at which measles was stated to have occurred was recorded. Clinic records confirmed that none of the children had received measles vaccine. According to the mothers, 76 of the children had had their measles diagnosed by either the family doctor or the clinic doctor; in four cases the parents or grandparents had made the diagnosis.

Measles was stated to have occurred before the first birthday in 53 children, and in nine of these before the age of 6 months. The table gives the results. Of children whose measles was stated to have occurred before 12 months of age, over two thirds were seronegative (haemagglutination inhibition antibody titre < 1/8). Also of children whose measles was reported after the age of 12 months, just under one third were seronegative.

Number and percentage of seronegative children according to age at which measles was reported

Age measles reported (months)	No examined	No (%) seronegative*
4-12	53	36 (67.9)
13-24	27	8 (29.6)

\*Measles haemagglutination inhibition antibody titre < 1/8.

### Comment

Measles is a not inconsequential infection, with a moderate to high fever, conjunctivitis, a blotchy rash lasting three or more days, and a troublesome cough. The presence of Koplik's spots is pathognomonic. The clinical diagnosis should not therefore be difficult in most cases, and measles should not be confused with other infections accompanied by a morbilliform rash in early childhood. These are chiefly caused by enteroviruses; in these infections Koplik's spots are not seen, the rash often lasts for less than three or four days, and coughing is seldom protracted or severe. It was surprising that the diagnosis of measles in children under 1 year and even in almost

one third of children aged 12-24 months was so often incorrect as judged by the serological evidence.

As was found by one of us in an earlier study,<sup>3</sup> these findings are relevant in attempts to prevent measles by vaccination in Britain. In the earlier study one of the most frequent reasons for failure to be given vaccine was the history of measles before the 15-18 months of age at which the vaccine was due to be given. There is no evidence that measles vaccine is harmful to a child who has had the disease (S Krugman, personal communication, 1981). We therefore suggest that measles vaccine should be administered to children irrespective of a history of the disease in the first year of life. If there is hesitation to give vaccine because of an alleged history of measles the uncertainty of such a clinical diagnosis can be pointed out to the parents and antibody testing offered to clarify things.

We thank Dr Christine Miller for helpful comments.

<sup>1</sup> Department of Health and Social Security. *Health and personal services statistics*. London: HMSO, 1980.

<sup>2</sup> Office of Population Censuses and Surveys. *Infectious diseases, 1980*. London: OPCS, 1980.

<sup>3</sup> Adjaye N. Measles immunization: some factors affecting non-acceptance of vaccine. *Public Health (London)* 1981;**95**:185-8.

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## Therapeutic abortion and chlamydial infection

*Chlamydia trachomatis* is a common cause of genital infection in both sexes.<sup>1</sup> In women, symptomless colonisation of the cervix may be followed by an ascending infection and the development of pelvic inflammatory disease. We set out to determine the incidence of sexually transmitted infections (including *Chl trachomatis* infection) in a group of women attending this hospital for termination of pregnancy.

### Patients, methods, and results

A group of women attending the day care unit of the department of gynaecology at this hospital requesting therapeutic abortion within the first seven weeks of pregnancy was studied. Patients who had received antimicrobial drugs during the previous three months were excluded, and a total of 89 entered the study.

Specimens were collected from the cervix before operation and cultured by standard procedures for *Neisseria gonorrhoeae*, *Chl trachomatis*, *Mycoplasma hominis*, and *Ureaplasma urealyticum*; and from the vagina for *Trichomonas vaginalis* and *Candida* spp. A specimen of blood was taken for serological

*Micro-organisms isolated from lower genital tract of 89 women before termination of pregnancy*

Micro-organisms	No of patients infected
<i>Chl trachomatis</i> alone	1
<i>Chl trachomatis</i> , <i>U urealyticum</i>	3
<i>Chl trachomatis</i> , <i>U urealyticum</i> , <i>M hominis</i>	2
<i>Chl trachomatis</i> , <i>U urealyticum</i> , <i>M hominis</i> , <i>N gonorrhoeae</i>	1
<i>M hominis</i> alone	3
<i>M hominis</i> , <i>U urealyticum</i>	13
<i>U urealyticum</i>	33
<i>T vaginalis</i>	0
<i>Candida</i> spp	16