inoculation. (d) Cross-immunity in monkeys was observed between the egg-passed material from the lesions of the child and the routine calf-lymph.

On Calves.—The ground-up scab material and the egg-passed material did not take on calves.

Paul's Test.—This was negative.

The lesions were so mild that the case could easily have been mistaken for one of chickenpox; but the distribution and the progress through papule, vesicle, scab, etc., were typical of smallpox. It was only to clinch the diagnosis that the laboratory tests were undertaken. As is usual in these cases, the child made an uneventful recovery.

Discussion

The laboratory investigations proved beyond doubt that the case was one of smallpox. Having established the diagnosis, we were concerned with "the source of infection." The main point to be settled was whether this was a case of inherited smallpox. The age of the infant was strongly in favour of an inherited infection. The eruptions had been noticed on the fifth day of birth, which means that smallpox had occurred not later than the third day of birth, taking into account the pre-eruptive pyrexial stage of two to three days. There is no reported case of acquired smallpox with such a short incubation period, which is supposed to be shorter only by two to three days even in variola inoculata (Downie, 1951). Hence the occurrence of smallpox on the third day of life practically eliminates the possibility of acquired infection after birth. This case was therefore evidently one of inherited smallpox.

When this point is conceded it is essential to assume an infection in the mother. There has been no reported case of inherited smallpox in which the mother has been healthy. It is easy to understand the pathogenesis of inherited smallpox when the mother has been suffering from the disease, but difficulties arise when she is apparently healthy. A pertinent question will then be, How can she transmit the disease? The answer, of course, is that she cannot, provided one can rule out subclinical infections in the individual. It is not so easy to exclude an infection in the mother on the basis of absence of symptoms alone.

Variola sine eruptione is not unknown. Bancroft (1904), Vaughan *et al.* (1925), and Gray (1949) have all reported cases of smallpox without any evidence of a rash. Hence it can be concluded that in the present case the apparently healthy mother had probably contracted smallpox during the last few days of pregnancy. The fact that there was smallpox in the locality lends credence to this view. We also know that the mother showed a vaccinoid reaction when she was vaccinated on February 2, the seventh day of the child's birth. This goes to prove that her antibody level, though not high, was sufficient to protect her from an attack. The exact mechanism of the placental transmission is not well understood. The only explanation that can be offered is that perhaps the amount of antibody transmitted in this case was not in proportion to the virus transmitted, and hence the disease had asserted itself in the child. That a fair amount of antibody had been transmitted along with the virus is shown by the fact that the lesions were discrete, the recovery was quick, and the child's illness was very mild.

Thus the virus-antibody ratio was favourable in the case of the mother, who did not suffer from smallpox; but the placental transmission so altered the virus-antibody balance as to produce a mild attack in the infant.

Summary

A case of smallpox in a child aged 3 days is recorded.

Probably this is the first reported case of inherited smallpox presented in detail in which the mother was absolutely healthy.

The pathogenesis in such cases is discussed.

We wish to acknowledge our indebtedness to Dr. S. E. D. Masilamani, health officer, Corporation of Madras, but for whose

timely intimation of the case a rare opportunity could easily have been missed; Dr. A. Ramachandra Rao, medical officer, Infectious Diseases Hospital, Madras, for his co-operation; and the entire laboratory staff of the virus and vaccine lymph sections of the King Institute, Guindy, for their efficient assistance.

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TALC PNEUMOCONIOSIS IN THE TEXTILE INDUSTRY

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Talc pneumoconiosis is a comparatively rare disorder, although a number of cases have been reported in the Italian, U.S., and Scandinavian literature (Parmeggiani, 1950; Buus-Hansen *et al.*, 1950; Friedman *et al.*, 1952; Siegal *et al.*, 1954). The bulk of reports (Perry, 1947, 1952) have related to workers in talc mills or steatite mines, or to employees engaged in the rubber industry (McLaughlin, 1949) and in the production of cosmetics (Köhler *et al.*, 1951). Moreover, as talc is also used as a filling for paper, soaps, and paints, in electric switchboards, and in the heat insulation of steam-pipes and in leather finishing, it might constitute a hazard to people engaged in these occupations.

So far as can be gleaned from the literature, there have been only two accounts (Merewether, 1933, 1934; McLaughlin *et al.*, 1949) of cases observed in this country. The following case, while in itself unusual, seems to be the first one to be recorded in a process used in the textile industry.

Case Report

A middle-aged well-built man aged 57 was referred to the Halifax Chest Clinic by the mass radiography unit. For the past four years he had been short of breath on exertion, and, although not considerable, it had recently been slowly increasing in severity. He also complained of some precordial tightness accompanied at times by a little wheezing. For the past seven or eight years he had had a "smoker's cough" accompanied by the expectoration of a small amount of pearly grey sputum. Haemoptysis had never been observed. His appetite was good and his weight stationary. During the past six months he had been decidedly more tired than formerly, and in view of this had changed his occupation from that of picker-making to a new and cleaner trade.

On examination the patient was seen to be a well-built, healthy-complexioned man, with no evidence of clubbing, cyanosis, or oedema. He had only moderate chest movement and air entry, and there were a few scattered rhonchi and a little bronchospasm. His chest expansion was 2 in. (5 cm.). Cardiovascular examination was not relevant; B.P. 150/85. The radial and retinal vessels were consistent with his age. A Mantoux test was positive to 0.1 mg. of old tuberculin. Repeated sputa were negative for tubercle bacilli on direct examination and culture. Blood examina-

tions revealed no abnormality in the levels of his total and differential white count. His serum alkaline phosphatase, serum proteins, albumin/globulin ratio, serum calcium, P.C.V., and E.S.R. were within normal limits. His maximum breathing capacity was 62.5 litres a minute and his vital capacity 1,700 c.cm. A chest x-ray film showed small areas of nodulation scattered fairly uniformly throughout all zones of both lung fields (see Fig.). These nodular

Radiograph showing small areas of nodulation in both lung fields.

shadows were closely packed, and under the hand lens appeared to be of fairly homogeneous density. There was also evidence of a lattice- or matrix-work background on which the nodular deposits were superimposed. In the right upper lobe, apex, and first space there was evidence of a diffuse opacity suspiciously like pulmonary tuberculosis. Radiologically the findings were thought to be those of talc pneumoconiosis probably complicated by apical pulmonary tuberculosis.

Occupational History.—This patient had been employed for 43 years (starting at 14 years of age) in the textile industry. His occupation was that of picker maker. These employees are concerned in making thongs, originally of buffalo hide, but in recent years from any type of leather skin. The picker is employed to drive the shuttle which threads the weft in the weaving loom from side to side. The hide is first steeped in a vat of water for three hours and is then hung up for five minutes to allow the surplus fluid to drain off. It is next placed on old sacking on the floor and dusted liberally with talc (French chalk, hydrated magnesium silicate). The talc is now spread uniformly on the hide by means of a whitewash brush. The hide is then reversed and the process repeated. Later the hide is lifted by two picker makers on to a table, and throughout these operations the atmosphere is cloudy with fine talc dust. Each week about 40 hides, each 12 by 6 ft. (3.6 by 1.8 metres) in size, are treated in this fashion by each picker maker. It was after working 39 years in this process that the patient began to observe the symptoms indicated above.

Discussion

Petrographically, talc consists of straight fibres, curved fibres, and shreds. These fibres measure up to 10 μ in length, though many are only 4 to 5 μ . Radiological evidence of talc plaques varying from single linear strands in the region of the diaphragm to massive deposits, bizarre in shape, extending over a large part of the lung fields, has

been recorded by Siegal *et al.* (1943). There is no certain association between talc pneumoconiosis and pulmonary tuberculosis, though Thorel (1896) and Zanelli (1931) have recorded cases in which these two conditions were probably present.

It is of interest to observe that the allied condition of talc granuloma has been reported, both in the U.S. and in the British literature (Mackey and Gibson, 1948; Walker, 1948; and Smith, 1948), as occurring in abdominal and gynaecological surgery, following the use of talc or French chalk in surgical gloves.

A survey of the literature suggests that this condition is not a pure pulmonary silicosis but is rather a slowly developing fibrogenic disorder; and it has been suggested that it may be allied to asbestosis. In the above reported case, talc pneumoconiosis manifested itself by a very insidiously developing dyspnoea associated with a mildly productive "smoker's cough."

We wish to record our thanks to Dr. K. Perry for his helpful comments on this case.

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FATAL CASE OF ENCEPHALITIS AFTER PHENOLPHTHALEIN INGESTION

BY

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Acute disseminated encephalomyelitis is not an uncommon condition in childhood, and Brewis (1954) was able to collect a series of 93 cases, occurring over an eight-year period, from the children's wards of three hospitals. Those cases which occur as a complication of the acute specific fevers have often been assumed to be due either to a direct invasion of the brain by the virus concerned in the primary infection or to the activation of a virus already present in the nerve tissue. Glanzmann (quoted by Russell Brain, 1940) suggested in 1927 that the mechanism was an allergic process, the nervous tissues having become sensitized to the original virus. Miller (1954), expanding this viewpoint, believes that, although acute disseminated encephalomyelitis has a multiple aetiology, the common factor in all cases is an allergic reaction involving nervous tissues. In the case now reported the ingestion of phenolphthalein, a substance known to be capable of exciting a hypersensitivity reaction in certain individuals, was followed by a fatal encephalomyelitis.

Case Report

A healthy female child aged 2½ years had been given a number of chocolate laxative tablets by an older child. It was not possible, therefore, to determine how much