The petechiae may occur from the 2nd to as late as the 26th day of the illness. Their duration is related to the duration of fever.

Other similar palatal lesions are discussed.

Our thanks are due to numerous colleagues for their help, in particular to Captains J. H. Adams, A. Addison, H. Baron, and O. W. Samuels, R.A.M.C., and to Miss Carla Tophoff for assistance in translation.

ADDENDUM.—Kendall *et al.* (*Brit. med. J.*, 1957, 2, 131) describe petechiae on the soft palate and scanty atypical monocytes in pharyngo-conjunctival fever. It is possible that some of our cases with "no evidence of glandular fever" or "possible glandular fever" had this condition, though none had conjunctivitis.

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At a recent joint meeting of the British Tuberculosis Association with the Society of Medical Officers of Health, Dr. H. D. CHALKE, president of the Society, spoke of the changed role of the M.O.H. in tuberculosis, and emphasized the educative role of health visitors. He himself preferred the general purposes health visitor, although he agreed that a few specialized tuberculosis health visitors were very valuable as a nucleus based on chest clinics. He also commented on the hazards of allowing uncontrolled immigration and vagrancy, especially since for the first time within statistical record more people were coming into Britain than were leaving it. Dr. K. NEVILLE IRVINE discussed the value of B.C.G. vaccination and the useful ages at which this could be given. Although ideally the newborn child should be vaccinated, Dr. Irvine felt this was not practical and agreed with the present principle of vaccination before leaving school. He looked forward to the wider use of freeze-dried vaccine.

SERUM PROTEIN CHANGES FOLLOWING B.C.G. VACCINATION

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A previous communication (Gilliland *et al.*, 1956) presented the results obtained by studying the serum protein of patients with pulmonary tuberculosis by the method of electrophoresis on paper. This study showed that the degree of change in the serum proteins was a measure of the severity of the systemic illness, and that the changes reverted to normal with recovery from the disease. This has since been confirmed by Leggat (1957).

Because of the difficulty in establishing the time of onset of tuberculous infections it was found possible to classify as "recent" only those in whom the infection was thought to be of less than six months' duration. The infections were usually severe enough to cause the patients to seek medical advice, so that minor degrees were seen infrequently.

B.C.G. vaccination, however, provides both a known time of onset of the infection and a course which is considerably less virulent than clinical tuberculosis. It was therefore thought to be of interest to investigate serially the serum protein in a group of nurses receiving B.C.G. vaccination.

Method and Results

A total of 17 student nurses whose tuberculin tests were negative by the Heaf multiple puncture method volunteered to act as subjects for this investigation. Samples of blood were obtained before B.C.G. vaccination and at three-weekly intervals thereafter to 18 weeks. The site of vaccination was inspected on each occasion and a note made of any constitutional disturbance or intercurrent illness. The biochemical methods used were those detailed in the previous communication (Gilliland *et al.*, 1956).

All vaccinations took a normal course and the girls remained fit throughout.

The results are shown in the Table (overleaf), including the mean albumin/ α_2 ratios and the standard errors of these means. The albumin/ α_2 ratios are plotted in the

Serum protein changes following B.C.G. vaccination. Shaded area shows normal values.

Chart, and it will be seen that there is a decrease during the first eight to nine weeks followed by an increase back into the normal range. These changes are significant, being several times the standard error of the mean. Although the changes are not of great magnitude, they consistently affect

the albumin and α_2 globulin levels and are therefore reflected to the maximum by taking the ratio between these two proteins.

Mean Values of Serum Proteins

	Before	Weeks after Vaccination				
		3	6	9	15	18
Albumin	4.20	4.28	3.91	3.83	3.83	4.11
" α_1	0.36	0.37	0.35	0.37	0.41	0.35
" α_2	0.63	0.68	0.70	0.73	0.64	0.64
" β	0.90	0.73	0.64	0.73	0.84	0.86
" γ	1.28	1.23	1.19	1.24	1.36	1.29
Albumin/ α_2 ratio ..	6.84	6.31	5.63	5.37	6.04	6.45
Standard error of mean	± 0.29	± 0.17	± 0.14	± 0.15	± 0.19	± 0.20

Conclusion

One of the problems apparent from our previous investigation was the lack of a strict measure of the sensitivity of our test. The clinical assessment of the patients must of necessity be a rough yardstick, depending more on subjective human observations than the albumin/ α_2 -globulin ratio obtained from serum electrophoresis. The date of infection was also impossible to determine in most cases.

Hudgins *et al.* (1956) showed that B.C.G. inoculation produced changes in serum protein in rabbits and guinea-pigs at an interval of four weeks. B.C.G. vaccination of healthy adults produces a short-lived mild tuberculous infection which has nevertheless yielded definite and consistent serum protein changes. It is concluded that not only can the albumin/ α_2 -globulin ratio mirror accurately small changes occurring in mild infections but that these changes appear early in such infections.

We would like to express our thanks to the nurses who volunteered to take part in this study, and to Miss Godden, the matron of Hammersmith Hospital, for her co-operation.

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Medical Memorandum

Ruptured Dissecting Aneurysm of Abdominal Aorta Simulating Obstruction of Large Bowel

Dissecting aneurysm of the abdominal aorta is a protean disease. Its symptoms vary according to the site and direction of the dissection and the branches involved. As a rule the electrocardiograph shows signs of previous involvement of the heart and coronary vessels, and arterial hypertension is common.

Sudden epigastric pain, collapse, and shock, combined with haematemesis or melaena (due to involvement of the gastric or mesenteric arteries) or with haematuria (renal arteries) progressing to uraemia and anuria (Jellinek, 1956), are signs of dissecting aneurysm. Evidence of progressive internal haemorrhage and the detection of an abdominal mass, which may pulsate or even increase in size during observation, should lead to a suspicion of ruptured aortic aneurysm. Abdominal ecchymoses are a late sign, which should clinch the diagnosis. A plain radiograph of the abdomen is often of some help. There may be signs of paralytic ileus due to involvement of the mesenteric vessels and retroperitoneal dissection, but cases presenting as an obstructive lesion of the colon are sufficiently rare (Cuny, 1937; Mayo, 1951) to warrant the report of the following case.

CASE REPORT

A somewhat demented lady of 83 was admitted to Frederiksberg Hospital on February 5, 1953, in a state of shock. In 1941 she had had a small cerebral haemorrhage

resulting in a left-sided facial paralysis. Practically no sequelae had followed, but there had been some mental deterioration during the last six months.

Two days after admission, and after resuscitation with dextran and blood transfusions, she complained of abdominal pain, and a surgeon was called. On examination the abdomen was distended and tympanitic, with "metallic" borborygmi on the left side and tenderness on the right side. There was arterial hypertension, and an electrocardiogram showed left axis deviation and signs of myocardial degeneration. A pelvic examination revealed a hard rounded tumour in the midline, the size of a grape-fruit. She was transferred to Surgical Department A for further observation, and x-ray studies were carried out. A plain x-ray picture showed a dilated air-filled colon. The next morning radiographs showed dilated coils of bowel in the lower right quadrant, with fluid levels visible in the radiographs taken with the patient erect. A partially calcified rounded shadow was seen in front of the lower three lumbar vertebrae. As bowel action had stopped and radiological signs of colonic obstruction had developed, an exploratory laparotomy was contemplated. However, a rapid deterioration of her condition set in, and she died on February 8.

At necropsy the principal findings were: severe atherosclerosis of the aorta (a coincident syphilitic aortitis could not be excluded) and coronary arteries, a large aneurysm of the abdominal aorta with a secondary dissecting aneurysm which had ruptured, a large collection of blood under the diaphragm, and a fibromyoma of the uterus. The Wassermann reaction was positive, but this information became available only after death.

COMMENT

Osler (1905) reported that aneurysms of the abdominal aorta accounted for about 1 in 1,000 admissions to Johns Hopkins Hospital. Since then the number of syphilitic aneurysms (most frequent in the younger patients) has decreased, while the incidence of arteriosclerotic aneurysms has increased. The prognosis has been determined by Estes (1950): in his series, comprising all cases of abdominal aortic aneurysm seen at the Mayo Clinic, 67% survived for more than a year and 49% for more than three years. Once symptoms appear—they probably indicate the start of a leak—most patients survive for less than a year. This is borne out by the fate of the three other patients with aneurysms of the abdominal aorta admitted to Surgical Department A during the last six years: (1) A man of 72 died 24 hours after admission owing to rupture and the formation of an extensive retroperitoneal haematoma. (2) A man of 66 with a dissecting ruptured aneurysm had an emergency exploratory laparotomy because an internal strangulated hernia was suspected; he died four days later. (3) A man of 54 had an exploratory laparotomy because of a cystic abdominal tumour, the tentative pre-operative diagnosis being a pancreatic or mesenteric cyst. At operation the correct diagnosis became evident, but he died suddenly six months later.

The present treatment of choice of aortic aneurysm is excision and the insertion of an aortic homograft or an "ivalon" prosthesis (De Bakey and Cooley, 1953; Kirklin *et al.*, 1953; Kinmonth *et al.*, 1955). Ruptured aneurysms have also been successfully excised. In the case described above such an operation would not have been warranted even if facilities for its performance had existed.

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