from the centre of the cheek towards the angle of the jaw. The swelling was soft in consistency, its edges were fairly well defined, and there was no fixation to the skin but only slight mobility over the deeper tissues. The parotid duct and orifice were natural, and no other local abnormality could be made out.

The patient was admitted to a private hospital for investigation. A probe passed easily along the right parotid duct. Cannula saliva was profuse in amount; it contained an occasional epithelial cell, but no organisms were present and cultures were sterile. Skiagrams and a sialogram were normal. There was a moderate degree of secondary anaemia.

A diagnosis of a tumour of the parotid gland was made, but there were certain unusual features. First, the tumour was situated further forward and lower than is usually the case with mixed tumours; and, secondly, it was soft in consistency. Both immediate operation and a period of observation were considered. It was eventually decided to give a course of deep x-ray treatment and to operate two weeks later. After completion of the treatment the patient's comments were that the tumour had become firmer, a little smaller, more rounded, and that it stood out more. These findings were confirmed on examination. The changes in the physical signs were interpreted as confirmatory evidence that the tumour was of the mixed parotid type. Operation was advised.

Operation.—This was carried out on October 19, 1943, under endotracheal gas, oxygen, and ether. The right parotid region was exposed through the usual curved incision passing from the zygoma downwards, slightly behind the angle of the jaw, and forwards to the anterior border of the masseter. The whole region was very vascular. The tumour was situated in relation to the lower and anterior part of the gland, and about two-thirds of it was within the capsule. In appearance the tumour was lobulated and resembled a lipoma. The anterior part of the tumour went just through the buccinator muscle and was in close contact with the duct, the outer part of which was cut across during removal. Both ends of the duct were probed. The wound in the duct was closed with three fine catgut sutures to the mucosa and three to the adventitia. The whole region was then covered with fascia, and the subcutaneous fat was sutured carefully. The skin was closed with horsehair.

Pathology.—The tumour itself was an irregular mass of fatty tissue, $1\frac{1}{2}$ in. (3.2 cm.) in diameter, with a lobulated surface, and of rather flattened spherical shape. Histologically it was a simple lipoma.

Post-operative Course

There was a moderate degree of swelling of the whole of the right side of the face after operation. The duct was probed daily and the flow of saliva appeared to be unobstructed. The local swelling started to subside on October 24, when a small haematoma was evacuated from the middle of the wound. Two days later there was a trace of pus at this site, and on November 3 it was thought that a few drops of saliva were coming through the wound. A jaw bandage was applied and the patient was put on fluids. The external wound then healed normally, but by November 8 the saliva from the duct was turbid. Next day all the dressings were removed and the patient was taking ordinary diet. By November 10 there was again a moderate degree of swelling of the right side of the face, but this disappeared after the duct had been probed. This swelling recurred daily, but was always temporarily cured by passing a probe, which produced a small amount of blood-stained saliva. A few days later the probe was slightly obstructed at about the hilum of the gland. At this stage it was noticed that when the facial swelling was at its worst there was a considerable fluid swelling in the subcutaneous tissues. The patient found that for a few hours after the probing she could empty the swelling by pressure, but after several hours this ceased to be possible. By November 23 the local swelling was getting very tense.

On November 29 the fluid coming along the duct was purulent and blood-stained. On the following day No. 1 catgut was passed along the duct, and was kept in position for 30 hours. During this time the swelling was less tense. Catgut was reinserted on December 1 and remained in for 24 hours. This was changed daily till December 6, when there was a small amount of salivary discharge from the mid-portion of the wound. On the following day the wound was dry, there was little local swelling, and the probe passed easily. After this the condition steadily improved, and the wound remained healed. The patient left hospital on December 12. There was no further trouble in the face, and the scar became almost imperceptible. The patient was seen in April, 1952, and in the intervening period there had been no change in the local condition.

Comment

In the above case the deep x-ray treatment was given because of the position and softness of the tumour and the doubts about the exact diagnosis. The subsequent sharper definition and increased firmness after irradiation tended to confirm the diagnosis of a mixed tumour.

The vascularity of the region, the softness of the growth, and the passage of its anterior part through the buccinator muscle made a preliminary and complete separation of the duct impossible. The post-operative troubles were due to the leakage of saliva at the suture line in the duct despite the daily probing. The gradual development of the tense subcutaneous swelling produced complete obstruction of the outflow of saliva during the course of the day. Resolution of the complication followed the use of indwelling catgut which was changed daily. The ultimate result was entirely satisfactory.

Medical Memoranda

★ A Case of Tick Typhus ★

Tick typhus is very rarely encountered in Britain and may therefore be forgotten when a differential diagnosis is made. The high fever, toxæmia, indurated "boil," and polymorphonuclear leucocytosis can lead to a diagnosis of pyogenic septicaemia. This is doubly regrettable, as not only is specific treatment denied but the administration of sulphonamides may possibly be harmful. The following case illustrates these points.

CASE REPORT

A woman aged 21, recently arrived from New Zealand via Panama, was admitted to hospital with diarrhoea and vomiting of three days' duration; also a septic boil on the right buttock, for which she had been receiving penicillin and sulphamerazine from her own doctor for the past 24 hours. There was no history of previous illness. Sixteen and fifteen days before admission she had been ashore at Colon and Cristobal respectively. Thirteen days before admission she had been ashore at Curaçao, where she sat on a rough stone wall at dusk wearing shorts. These were the only shore contacts during the previous four weeks. There were no similar illnesses aboard ship. Eight days before admission a boil developed on the right thigh with inguinal adenitis. Five days later headache, vomiting, and diarrhoea began.

On examination there was obvious toxæmia; the temperature was 103°F . (39.4°C .) and pulse 130; the conjunctivæ were injected. On the outer aspect of the right thigh was a pustule $\frac{1}{2}$ in. (1.25 cm.) in diameter with a black necrotic centre, the whole surrounded by an indurated haemorrhagic area 4 in. (10 cm.) in circumference. Nothing else abnormal was found; the spleen was not palpable, and the skin was clear. There was a polymorphonuclear leucocytosis of 24,000, but blood taken for culture at this time proved sterile. Penicillin was given.

Four hours later a definite purplish-red macular rash appeared on the thighs. Tick typhus was now suspected, but it was decided to await the result of agglutination reactions before giving chloramphenicol.

Next day her condition had deteriorated considerably; she was semi-comatose, incontinent, and dehydrated. The rash had spread all over the trunk and proximal parts of the limbs, being haemorrhagic in the flexures. Chloramphenicol, 1 g. four-hourly, was begun, and was fairly well retained, the dose being repeated when necessary. Intravenous fluids were given. After 48 hours, though the patient was still very ill, the rash had faded and the temperature fallen abruptly to subnormal levels. By the fifth day appetite had returned and mentality was normal. Chloramphenicol was discontinued after 22 g. had been given.

The agglutination reactions were as follows:

	OX 2	OX K	OX 19
Day of admission	1/50	Nil	Nil
Fourth day	1/250	Nil	1/125
Thirteenth day	1/320	1/40	1/80
Twenty-first day	1/160	1/20	1/40

Convalescence was rapid and uneventful, though the eschar took three weeks to heal completely.

COMMENT

The definite eschar, combined with the rise in OX 2 agglutination, strongly suggests a tick-borne infection picked up in Curaçao rather than one of the Rocky Mountain spotted type acquired on the American mainland. The dramatic effect of chloramphenicol is well shown; also the occurrence of a leucocytosis (Machiavello, 1951) rather than the leucopenia described by earlier writers. This case illustrates the advisability of starting specific therapy without awaiting laboratory confirmation of the diagnosis.

My thanks are due to Mr. Whittaker, M.I.L.T., who carried out the pathological investigations; also to Lieut-Colonel H. J. Bensted, Director of the Public Health Laboratories at Colindale, who kindly confirmed the agglutination reactions.

R. F. BUTTERWORTH, M.D.
Iford Isolation Hospital.
Lately Medical Officer.

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Infective Endocarditis Due to *Bact. Faecalis* *Alcaligenes*

While some micro-organisms are obligatory pathogens and always associated with definite illness, others are normally harmless commensals that become pathogenic only in special circumstances and in special sites. Well-known examples of the latter type are *Bact. coli*, harmless in the bowel but sometimes migrating to the renal tract and causing pyelitis, and *Streptococcus viridans*, occurring naturally in the mouth but causing a transient bacteraemia after dental extraction (Okell and Elliott, 1935) and settling down on deformed or injured heart valves to cause an endocarditis.

Bacterium faecalis alcaligenes (Petruschky) is a normal habitant of the intestinal tract of man, and therefore is likely to be a contaminant of blood and other cultures. On the other hand, it has been blamed for fever of the enteric type (Wilson and Miles, 1945; Strong, 1945; Stitt, Clough, and Branham, 1948). Confirmation of the pathogenicity has been suggested by the agglutination of the organism by the patient's serum up to a dilution of 1:50 (Stitt *et al.*, 1948). All intestinal organisms may on occasion pass from the lumen of the bowel into the blood stream, where they are destroyed. It is, however, possible to imagine a transient bowel bacteraemia with the organisms settling on a damaged heart valve just as the streptococci from teeth have been shown to do. This seems to have happened in the following case.

CASE REPORT

A married woman aged 54 had had heart disease in childhood arising from previous rheumatic fever. She had also had pneumonia three times, at the ages of 10, 49, and 52.

Since 1943 she had had diabetes, controlled by diet, 20 units soluble insulin in the morning, and 20 units P.Z.I in the evening. She had a particularly severe attack of subtertian malaria in May, 1950.

On July 5, 1950, she had a sudden attack of nausea and vomiting, followed by continued irregular fever, 100–102° F. (37.8–38.9° C.), with nausea and occasional shivering. Her blood was free of malaria parasites, and antimalarial treatment did not help her. After a fortnight she was admitted to hospital, pale, ill, and tired-looking. There were bruises on her arms at the site of the insulin injections.

Examination showed throat not inflamed, no enlarged glands; pulse rapid, 110 per minute; heart enlarged, apex 4½ in. (11.4 cm.) out in the sixth space; mitral systolic murmur not conducted out; ringing accentuated second sound along left sternal border. In the aortic area there were a slight thrill, a harsh noisy systolic murmur conducted up into the neck, and on leaning forward a diastolic murmur. Blood pressure, 118/90 mm. Hg, showed low pulse pressure. There were moist rales at both lung bases. There was generalized abdominal tenderness, but the liver was not palpable. There was no finger-clubbing.

A blood count showed: Hb, 66%; erythrocytes, 3,600,000; leucocytes, 13,800 (81% polymorphs). Blood slide showed no malaria parasites. Urine contained a trace of albumin.

The fever, leucocytosis, and severe toxæmia resembling a septicaemia in a person who gave evidence of valvular disease suggested that the diagnosis must be bacterial endocarditis; blood cultures were accordingly taken.

Bacteriology.—On July 20 two blood cultures were taken, and both yielded a pure growth of a Gram-negative vibrio-like organism. The organism failed to ferment lactose, glucose, mannite, saccharose, and dulcitol. It failed to form indole and was actively motile. Litmus milk was rendered strongly alkaline. It therefore possessed the characters of *Bact. faecalis alcaligenes*. The patient's serum agglutinated the H suspension of the isolated organism to a titre of 1 in 2,560. No agglutination occurred with the O suspension. Six normal sera were set up as controls and no agglutination took place.

Progress.—July 23: No clinical improvement after three days on penicillin, 600,000 units twice daily. Blood culture positive. July 26: Chloramphenicol, 3 g. followed by 0.25 g. four-hourly, started. Blood culture positive. July 31: Condition worse, temperature swinging to 104° F. (40° C.). Liver enlarged and tender. August 1: Blood culture negative. August 5: No improvement. Streptomycin, 1 g. daily, and sulphadiazine, 1 g. four-hourly, begun. August 10: Temperature almost normal, blood culture sterile, sulphadiazine stopped. August 15: Temperature still normal, but general condition deteriorating. August 17: Blood culture sterile. August 23: Blood culture positive, leucocytes 24,000 per c.mm. (polymorphs 93%). August 26: Death.

Necropsy.—Permission was granted for only a limited and hurried examination. The heart showed excess fluid in the pericardial sac, and both ventricles were enlarged, especially the left. The aortic valve had lost its structure, and consisted of an opening about 5 mm. in diameter through warty vegetations growing on both sides of the septum. The mitral valve was normal. There were no infarcts in the kidneys or spleen. *Bact. faecalis alcaligenes* was isolated in pure culture from the spleen, but the pericardial fluid was sterile.

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A. C. E. COLE, M.D., M.R.C.P.
C. MARSHALL, F.I.M.L.T.

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