the factors associated with twin-locking. He found the complication was more likely to arise if the pregnancy occurred in a primigravida and the uterine contractions were strong. He therefore deduced that the effective causal factor in the production of this complication was strong contractions in a uterus whose basic tone was high.

The cases reported bear out Lawrence's findings with regard to the incidence of locking, as both patients were primigravidae and in each case the uterine contractions were strong. Breech and vertex presentation, with the type of locking described above, is classed Group 2 by Lawrence, and in this group it is seen that 86.6% of the leading twins are stillborn. Another possible aetiological factor may, however, be suggested—namely, intra-uterine death, when the flaccid dead foetus may be pushed past the head of the other twin by the expulsive force of a strongly contracting uterus.

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REFERENCES

- Kerr, J. M. Munro, and Moir, J. Chassar (1949). *Operative Obstetrics*, 5th ed., p. 221. Baillière, Tindall and Cox, London.
Lawrence, R. F. (1949). *J. Obstet. Gynaec. Brit. Emp.*, **56**, 58.
Nicholson, E. L. (1942). *Ibid.*, **49**, 162.

Cutaneous Anthrax in Dar-es-Salaam

It is interesting to note how this disease, once regarded with good reason as highly dangerous, has become progressively less serious so far as mortality figures go. Legge (1905) mentions a mortality rate of 25.6% in 261 cases, and states that this was a general average, though individual series might show better results. For example, Guy's Hospital from 1896 to 1904 had a mortality of only 7.1% in 56 cases, using treatment by excision or ipecac. Murphy *et al.* (1944) mention that the figures for West Virginia (U.S.A.) were 26.8% out of 394 cases in 1928–32 and 13.8% out of 390 cases in 1938–42.

In Britain, anthrax infections have become rarer, probably owing to the careful control of hides, which are the main source of infection. Holgate and Holman (1949) collected eight cases in 14 months from two tanneries in Leeds and district dealing mainly with hides from East and West Africa. Dar-es-Salaam is the main channel of export of hides from Tanganyika, and indeed from East Africa, and anthrax is endemic; it would be expected that, if some of these hides are infected, cases would occur among hide porters. Cutaneous anthrax does in fact occur quite often. In 1949, 28 cases were admitted to the infectious diseases section of the Dar-es-Salaam hospitals, and in the first seven months of 1950 there were another 27. Cases have not been found in other occupations.

Clinical Aspects

Diagnosis was frequently made by the men themselves. Appearances were typical, showing vesiculation surrounding a necrotic centre, and underlying oedema. Sometimes only a single moderate vesicle was seen, so quick are some to report. Owing to their black skin the colour changes of the inflammation were invisible.

Severe spreading oedema seemed to occur mainly where the lesion was on the face or neck.

These men wear a minimum of clothing, therefore all parts of the body may be infected, some regions more frequently than others: face, 15; head and neck, 8; shoulders and upper arm, 12; forearm and hand, 6; chest, 7; back, 7; thigh, 3; abdomen, 1; more than one site, 4.

Bacteriological confirmation by examination of Gram-stained film was carried out, but not culture. In all except three cases the typical large straight Gram-positive bacillus was found.

Constitutional disturbance was not severe in most cases, the patients neither complaining of nor showing marked signs. As, however, some of these men do not complain lightly, it was thought that the highest temperature reached might be a better index of the toxæmia: The temperatures observed were: no fever or under 99° F. (37.2° C.), 18 cases; 99°–101° F. (38.3° C.), 16; 101° F. and above, 18. Three others were admitted unconscious, delirious, and collapsed, and died within two hours, demonstrating that cutaneous anthrax, if neglected, can be dangerous.

Treatment

During 1949 the standard treatment was with sulphathiazole, 2 g. on admission and 1 g. four-hourly. This was continued for four to seven days. Penicillin was used in addition towards the end of the year, when it seemed that the lesions resolved quicker and fever or toxæmia disappeared more rapidly. During 1950 soluble penicillin, 50,000 units three-hourly, was used in combination with sulphathiazole and continued for three to seven days. Scrutiny of the figures does not yield any statistical proof of the superiority of this regime, but clinically there was no doubt. Oedema and activity disappeared more rapidly, and the average duration of fever was 2.5 days in 1950, as compared with 3.4 days in 1949. Dressing with an antiseptic ointment held in place by "elastoplast" was the only local treatment.

Of the three fatal cases—two in 1949 and one in 1950—no history could be obtained about the duration of the infection, but from appearances it was probably at least a week.

No case remained seriously ill for more than 48 hours. In spite of treatment the ulcers were slow to clean up and heal, the average time for the slough to separate and the ulcer to become clean being 14 days, and another 10 days at least were required for full healing. This was noted because the policy was to retain the men until they were completely healed, as they are extremely slack in attending as out-patients.

They all returned to their work without anxiety. Second infections have not been noted.

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REFERENCES

- Holgate, J. A., and Holman, R. A. (1949). *British Medical Journal*, **2**, 575.
Legge, T. M. (1905). *Lancet*, **1**, 689.
Murphy, F. D., La Boccetta, A. C., and Lockwood, J. S. (1944). *J. Amer. med. Ass.*, **126**, 948.