"MORPHINE INJECTOR'S SEPTICÆMIA" ("WHITMORE'S DISEASE").

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IN 1912, Major Whitmore, I.M.S., first described* the pathological anatomy and ætiology of a disease that is met with fairly frequently in Rangoon. It was provisionally termed by him "Morphine Injector's Septicæmia." Since his account appeared it might have been expected that observers in other parts of India and elsewhere would have recorded cases, but the only reference I have come across is a brief note in Castellani's "Text-book," where it is called "Whitmore's Fever," and is said to resemble glanders.

My object in writing this note is to direct the attention of practitioners in India and elsewhere to this disease, in order that it may be further investigated, since it seems improbable that it is confined to Rangoon. The habit of injecting morphine is doubtless not uncommon in Calcutta, Bombay, and other large towns, and the disease should be met with in these centres.

Clinically, it is an obscure condition, and the diagnosis is generally made only at the autopsy. I give a brief history of a recent case that was in the hospital of the Rangoon Jail.

P. T., a Burman of 28, cultivator. Admitted to jail on 12th September in apparently good health. He remained well till five months after admission, when he complained of cough and fever. On admission to hospital, on 15th February, temperature was 101½, pulse 98, respiration 26. There was cough with pain. Tongue furred. Slight ulceration of tonsils noted. Base of left lung was dull, with loss of breath-sounds and diminished fremitus. Spleen distinctly palpable. Examination of stools, blood, and sputum was negative. Hæmoglobin 75 per cent. Urine normal.

19th February, temperature normal. General condition as before. Physical signs unaltered. Leucocyte count gave:—Lymphocytes 21, large mononuclears 3, polynuclears 72, eosinophils 3, and mast cells 1. From the 20th temperature rose, and there was an irregular pyrexia (99° to 101°) for 32 days. The physical signs did not alter, but the general condition became gradually worse. A diagnosis of chronic tubercular pleurisy was made. About 23rd March the fever became higher and more regular, with a definite evening rise. The percentage of polymorphonuclears fell to 60, and Hgb to 50 per cent. About 8th April fever became more irregular, and continued so till death. Condition becoming worse; physical signs as before. 18th April, blood count, leucocytes 6,900, red corpuscle 3,365,000, Hgb 50 per cent., colour index ·74. 28th April, leucocytes, erythrocytes, and hæmoglobin all diminished. Polynuclears rose to 76 per cent. The Arneth count gave a moderate left shift (index 57·6). He sank and died on 5th May, after an illness of about twelve weeks.

Autopsy.—Body wasted. No marks of morphine injections. *Right lung:* extensive pleural adhesions, not very recent. Some congestion of base. The organ contained numerous areas of a grey yellow colour, of fairly firm consistency, irregular in outline, varying in size from two or three lines to ½ inch across. These areas had generally a zone of injection around them. *Left lung* presented similar appearances. Pleura were adherent to the diaphragm, and this in turn to the thickened capsule of the spleen; between spleen and diaphragm was a collection of curdy purulent matter. Spleen weighed 39 oz., and contained several caseous nodules and foci of suppuration. Cloudy swelling of liver; there was a small abscess, size of half a walnut, in left lobe.

The lungs and spleen were sent to Capt. Owens, I.M.S., Chemical Examiner, who very kindly examined them. From these organs he cultivated a motile bacillus that gave the cultural characters of that described by Whitmore.

Since 1910 eleven instances of this disease have been met with in the Rangoon Jail. From a consideration of them the following facts emerge.

Ætiology.—It occurs in adult males of the poorer class. In 9 out of the 11 the patient was an habitual morphine injector. The case above described was an exception in regard to this. Race and occupation indifferent.

Onset and Course.—It is an insidious disease, difficult to diagnose, especially as it occurs chiefly in broken-down morphine and cocaine victims. In one case the patient was not taken ill for five months after admission to prison; in two cases the interval was nearly a year. In others the interval was short, or they were ill when first admitted.

General malaise and fever are early symptoms. The fever is usually irregular, generally not very high. Remissions are common. There may be rigors.

The duration varies from one to three months generally, there are pulmonary signs and symptoms, such as cough, subacute bronchitis, with patchy dulness, especially at the bases and crepitations. Friction was noted in some cases.

In two instances the spleen was palpable. Abscess formation was met with twice; they may be subcutaneous or intramuscular. Œdema of an arm occurred once; of the legs, several times. Diarrhœa was seen sometimes. Examination of the blood yielded nothing of value.

* (a) *Indian Medical Gazette*, July, 1912.
(b) *British Medical Journal*, December, 1912.

Pathological Anatomy.—The lesions are highly characteristic, and consist of the "nodules" in the lungs already described. They were seen in 10 of the 11 cases, and resembled areas of bronchopneumonia. They are unlike anything I have seen in any other disease. These peculiar lesions are not confined to the lungs; nodules exactly like them were seen in the liver in three instances, and in the kidney in one. In one case the lesions were confined to the liver, being absent from the lungs.

Small abscesses, sometimes larger ones, were found several times in the lungs, liver, and spleen. The spleen was enlarged in four cases. Suppurating mesenteric glands, ulceration of the sigmoid, and intra-muscular abscesses were met with in different cases. Endocardial petechiæ were noted once.

Commentary.—It is clear that there is a general similarity between this disease and glanders, both in regard to symptoms and pathology. Glanders is (in England, at least) a rare infection in man, and it is not altogether easy to find a really satisfactory description of it, from the clinical and pathological standpoints, in the standard text-books. This Rangoon infection, however, seems to be differentiated from glanders in several points, such as its ætiology, since it has no relation to the horse, but has a very close relation to the hypodermic syringe. Again, in human glanders there are very frequently various lesions of the skin, such as erysipelatous rashes, bullæ, pustules, etc. In none of my cases were there skin lesions of this sort. The characteristic nodules that may occur in the liver and kidney have not, to my knowledge, been described in glanders.

Lastly, the Rangoon infection has been shown by Whitmore to be caused by a bacillus with certain definite morphological and cultural characters that distinguish it from *B. mallei.*

In short, the balance of evidence favours the view that this Rangoon disease is a separate and distinct infection. But even if further investigation fail to establish this contention, it may be worth while putting this case on record, since clinical accounts of glanders are rather rare. It is curious that this disease is not oftener described in the medical journals of India, where it is generally believed to be fairly common.

AN OUTBREAK OF ANTHRAX.*

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As outbreaks of anthrax are not very common, it was thought that a few notes on the subject might be interesting.

The paper deals with two outbreaks, one which occurred in 1901, and the other in 1914, both on the same garden, and both associated with anthrax epidemic among the cattle. It also includes three sporadic cases from another garden.

For the notes of the 1901 epidemic I am indebted to Hospital Assistant B. C. Dass of Balijan, who had carefully preserved them, and has also given me much assistance in collating the facts, and doing microscopic examinations during the last outbreak.

In 1901 the epidemic began in June, and up to the end of August, when it ended, there were 18 cases and 6 deaths.

In 1914 it lasted from September to December with 30 cases and 7 deaths.

Including the other 3 cases the table shows in all 57 cases with 13 deaths, 25·4 per cent.

Nine of these were cases of internal anthrax, all of which died, leaving 42 cases of malignant pustule, of which 4 died, a mortality of 9·5 per cent. for both years.

The mortality in 1901 was 14·2 per cent., but in this year was only half of this, 7·1 per cent. This I am inclined to attribute to the method of treatment, which, tried tentatively towards the end of the outbreak in 1901, has been more thoroughly carried out from the commencement of the epidemic this year.

Of its association with the cattle epidemic there can be no doubt. The small chart* showing the number of dead cattle reported and the number of coolies infected week by week from September to December, 1914, shows the similarity of the curves, and the fact was established in most cases of either cutting up or eating cattle dead of the disease, the former giving rise to malignant pustule, and the latter to internal anthrax, while some suffered from both.

It by no means follows that eating anthrax cows will be followed by anthrax in the coolie. In one Uriya line a cow died one evening, and it was directed to remain unburied until microscopical examination had established the cause of death. One blood slide showed enormous numbers of anthrax bacilli, but next morning the cow had disappeared, and was reported to be in pieces, all over the line. No case of anthrax came from that line, except a malignant pustule three weeks later.

On the other hand, cases frequently occur together in one house after eating infected flesh, or in different houses traced to eating the same carcase. Thus, cases 1 to 11 of 1914 all admit sharing two cows dead of an unknown cause, while of these cases 4, 5, 10, and 11 were in the same family. Cases 20 and 21 not related had pieces of the same buffalo. Instances like this are common.

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* From Transactions, Assam Branch, B. M. A.

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