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BRUCELLAR SPONDYLITIS AND HEPATITIS

A REPORT ON TWO CASES WITH A REVIEW OF THE LITERATURE

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The object of this paper is to draw attention to the bone and liver complications of brucellosis, a disease which is more common in South Africa than is generally believed.

Evans,¹ senior bacteriologist of the National Health Institute of the USA, suggests that the number of persons suffering from brucellosis in the USA, during any year, probably lies somewhere between 40,000 and 4,000,000. This includes cases disabled by the disease as well as those who have recovered completely from a transitory infection. The 2 cases reported here presented at the Edenvale Hospital, Johannesburg, within 1 month, which suggests that brucellosis is a common condition in South Africa.

Brucellosis is characterized, in the active period, by septicaemia. This accounts for its widespread complications. Bone and liver complications have been reported with increasing frequency in the USA¹ and in other parts of the world.^{2, 3}

Case 1

A 65-year-old female from Johannesburg was admitted on 28 September 1957. She was admitted previously to another hospital with a history of pains in her legs for 3 months. She was discharged 10 days later with the diagnosis of a degenerative disc lesion, and was treated with tolseram tablets, 2 *t.d.s.*, and physiotherapy. After 47 days on this treatment, without any improvement, she was brought to Edenvale Hospital with excruciating pains in the legs and unable to walk. She was pyrexial (101°F); blood pressure 160/90 mm. Hg; *nil* abnormal in chest or abdomen; some wasting of both quadriceps muscles and diminished sensation in the 3rd lumbar dermatome.

Investigations: Hb. 12.1 g., leucocytes 8,500, neutrophils 81%, sedimentation rate 52 mm. in the first hour (Wintrobe), blood urea 14 mg., blood sugar 110 mg., alkaline phosphatase 6.8 King Armstrong units, urine normal and X-ray of chest normal. X-ray examination of the lumbar spine showed a 'destructive lesion of the 2nd lumbar interspace with narrowing of the space and surrounding soft-tissue swelling. Although somewhat unusual at this age (65), the appearances suggest a tuberculous spondylitis, although other infective processes could cause a similar spondylitis'.

Mantoux tests, 1st and 2nd strengths, were negative. Several repeated modified Coombs tests for brucellosis were positive. A repeat X-ray after 3 weeks showed a 'destructive lesion of the disc and adjacent end-plates between L 2 and 3. Appearance is typical of a chronic infection'.

The patient was treated as a case of brucellosis (see last paragraph). She responded remarkably well and was ambulant on discharge.

Case 2

A 49-year-old female from a farm in the Transvaal, was admitted to Edenvale Hospital on 30 October 1957 with pyrexia and right

upper abdominal pain. The positive findings were: spider naevi on the chest, hepatomegaly (3 fingers, tender) and palmar erythema.

Investigations: Hb. 13 gm., leucocytes 10,000, neutrophils 68%, sedimentation rate 38 mm., liver-function tests: flocculation tests ++, bilirubin 1.2 mg., zinc sulphate 18.8, mucoproteins 94 mg., total serum proteins 7.3 g. (albumin 3.6, globulin 3.7), urine normal. Rickettsial and viral agglutination tests were negative and the modified Ide test negative.

The patient did not respond to broad-spectrum antibiotics. At this stage, on consideration of her home environment, brucellosis was suspected. A modified Coombs test proved positive, as did several repeat tests. Again the patient responded well to treatment as outlined below.

DISCUSSION

Brucellar hepatitis. Affinity of Brucellar organisms for the reticulo-endothelial system is well known. According to Huddleson⁴ the liver is affected in a large percentage of cases. Sometimes a marked enlargement of the liver persists. Hepatitis is evidenced by enlargement and tenderness of the liver, and by liver-function tests. Cirrhosis of the liver, attributed to brucellosis, has been described frequently in the German literature.⁵

Brucellar spondylitis. Spondylitis is a common complication, and was first described in 1911.⁶ It affects chiefly the lumbar and lumbosacral regions, and is accompanied by radiculitis. The pain is most severe, and radiates along the affected nerves. At times the patient is unable to move or sleep. The pain is gradual or sudden in onset suggesting, in the latter case, a disc lesion. It is constant, and is exacerbated by coughing or movement. This type is common in regions where chronic brucellosis occurs. The X-ray changes most often noted include calcification of the vertebral body with a zone of sclerosis beginning at the site of the focus with proliferation of bone spurs across the interspace. (Fig. 1.) In some cases only part of the body is involved; in others, the lesion is confined to the disc, with narrowing of the intervertebral space. The symptoms produced are often diagnosed as sciatic neuritis due to other causes.

Source of infection. Evans⁶ states that 'people who have no direct contact with farm animals may be exposed to infection by consuming dairy products, for infected animals yield infected milk. The consumption of raw infected dairy products is responsible for most of the cases that occur in the general population. Ice-cream, butter and cheese are



Fig. 1. X-ray changes in the lumbar vertebrae.

sources of danger if non-pasteurized milk or cream are used in their manufacture.

Incubation period. This varies from 6 days to 3 months.

Duration of the disease. This may be a few days or many years.

Clinical criteria. The initial septicaemia is sometimes followed by localized pathology in all organs of the body. According to the World Health Organization Expert Committee report on brucellosis, the two common forms of the disease are:

1. An acute or insidious onset of fever of limited duration followed by apparent recovery.
2. Long-continued disease with periodic exacerbation.

Diagnosis. Bishop states that in the cases recorded in the literature, diagnosis of brucellar vertebral lesions was made by the serological and roentgenographic findings, seldom by culture. Diagnostic aids are a low white-cell count, elevated temperature with a relatively high sedimentation rate,

negative tuberculin tests, positive agglutination test and roentgenographic evidence as described.

Treatment. At the moment it appears that treatment with cathomycin, or with a combination of the streptomycin group with one of the broad-spectrum antibiotics, offers the most effective form of treatment.^{3, 7, 9} The new discovery of cathomycin is of vital importance in the treatment of brucellosis.^{11, 12}

Incidence. Chronic brucellosis is probably a common condition in South Africa. Zoutendyk⁸ discusses the incidence as follows: 'Brucellosis, especially the chronic form, is not a clinical diagnosis; the clinician requires laboratory confirmation. Brucellosis is often considered an uncommon condition, especially in children, whereas in fact it is very common, being endemic in some parts of South Africa and a cause of much chronic ill-health. Wallis,¹⁰ in his paper on brucellosis in children, has summarized the problem very aptly as follows: 'Brucellosis is a disease of mistakes. If we do not think of it, we miss it; or we may think of it and test for it, yet find nothing.'

The same report, cited by Zoutendyk,⁸ states: 'A brucellosis survey was undertaken by Dr. L. Schrire . . . preliminary studies indicate that brucellosis is endemic in parts of the North Eastern Transvaal and South West Africa. This infection remains a serious cause of chronic ill-health in these areas as well as being responsible for sporadic cases in many other parts of the country.'

SUMMARY

1. Two cases of brucellosis, one hepatic and the other bony, presented at a Johannesburg hospital, within a month.
2. The incidence of the disease is much greater than is generally believed.
3. Brucellosis should be kept in mind by the clinician in cases of backache, spinal and hepatic pathology, and in other states of chronic ill-health.

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