

boys closely examined the contents and looking at each other threw the sandwiches away as if they had polluted their hands. Of course it is not proposed to start a conversion campaign but the facts as they become available should be more widely disseminated both to medical men and the public at large.

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### SCIATICA AND BRACHIAL NEURITIS AS COMPLICATIONS OF BRUCELLOSIS

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THE neurological complications of brucellosis are little appreciated by the general practitioner. These complications may appear as meningitis, encephalitis, myelitis, radiculitis, neuritis and even as psychoneurosis. In fact Evans (1947) is of opinion that no case of neurosis should be so labelled unless brucellosis has been excluded.

It is not sufficiently realised that sciatica and brachial neuritis may occur as complications of undulant fever. Brucellosis is really not so uncommon as it is thought to be. The acute phase is mistaken for malaria, typhoid, paratyphoid, influenza, dengue, kalaazar, hepatitis, rheumatism, rheumatic fever, and tuberculosis.\* The chronic phase of brucellosis is usually mistaken for rheumatism, chronic ill health, general debility, tuberculosis\* and psychoneurosis. Majority of cases of chronic brucellosis complain of a weak state of health with feeling of tiredness and pains in the legs, arms and joints. It is therefore essential that patients who have

a complaint of sciatica or brachial neuritis and who have a doubtful previous history of the above diseases or suffer from symptoms that can be attributed to chronic brucellosis, an investigation for Brucellosis should be undertaken.

Nelson-Jones (1951) reviewing the literature on neuro-brucellosis has drawn attention to the various neurological complications of the disease. The sciatica and brachial neuritis and intercostal neuralgia in brucellosis are attributed to radiculitis and in some cases to spondylitis of the spine, that is to lipping of the bodies of the vertebra.

Kulowski and Vinke (1932), described the case of a patient who had lumbosacral tenderness. On exploration an abscess was discovered in the region of the lumbar spine, and *Br. abortus* was cultured from the pus. Agglutination test for Brucellosis was also positive up to 1 in 320.

During the course of 18 months, 70 patients who had acute brucellosis were discovered. In some of these cases history was taken in detail and it was found that six cases had sciatica as a complication and four had brachial neuritis. Several cases had intercostal neuralgia.

Sciatica may occur during the course of the acute phase or may occur later when the patient has passed into the chronic stage.

#### Typical Cases

*K.C.*—A twenty-four years old mechanic complained of severe pain shooting down from the left buttock along the back of the thigh and leg to the left heel, this pain lasted for 3 weeks. After this time he complained of slight pain in the wrist and left heel. This was mistaken for rheumatism. On closer scrutiny it was found that his spleen was enlarged 3 fingers below the costal margin and was firm, but not hard. He also gave a history of a typhoid-like fever for one month from which he had suffered 3 months previously. After this fever he had orchitis. His serum was positive up to a titre of 1 in 250 for brucellosis. There was also a history of taking raw cow's milk.

*Dr. B. K.*—A twenty-five years old lady doctor complained of severe pain in her right thigh going down the leg. She also had pain in the right hip joint. A renowned surgeon treated her for 1½ months with deep X-ray for arthritis of the hip joint, but without any relief. A re-

\* Hence the 'increasing menace' of Tuberculosis and sale of seals.—EDITOR, *I.M.G.*

nowned gynaecologist thought her to be a case of enlarged ovary, but another gynaecologist did not agree with this finding. An orthopaedic surgeon thought that there was nothing wrong with the bones and joints. A general surgeon attributed the trouble to appendicitis and performed an appendicectomy. The patient also complained of feeling tired. The fact that she had acute brucellosis 10 months previously had been disregarded in this case. She had several waves of fever and it was only on 154th day of her illness that she was properly diagnosed. She had been variously diagnosed to be suffering from sandfly fever, dengue, malaria, typhoid and tuberculosis. In the acute phase her agglutination test for brucellosis was positive up to a titre of 1 in 1250. Blood culture was positive for *Br. abortus*.

*M.*—A twenty-five years old sweeper was admitted with a diagnosis of sciatica of the left side. He complained of pain in the left hip shooting down to the left leg. He stated that four months previously he had similar pain on the right side. On further enquiry he stated that he had a continuous fever of four months duration which left him only about 15 days previously. In this fever he had pain in the various joints of his body. Physical examination revealed a tall wasted individual. Liver and spleen were not palpable. The total leucocytic count was 9,100 and the differential count was, polymorphs 45 per cent, lymphocytes 50 per cent, monocytes 2 per cent, and basophils 3 per cent. E.S.R. was 35 mm. (Westergren). Agglutination test for brucellosis was positive up to 1 in 1,280. X-ray of the spine and hip, were negative for tubercular disease.

*R.R.*—A thirty years old lady complained of severe pain in her right lower extremity for two years, the pain radiated downwards from the right hip. For some time the pain had been so bad that the patient could not walk about, and feared that she might be crippled for life. For the last six months she also complained of pain in the right side of her neck which radiated to the shoulder and the right arm and forearm. The history was that 4 years previously she had 5 months' continuous fever which left her very weak. The fever had been variously attributed to malaria, typhoid, and tuberculosis. An X-ray of her lungs, however, only showed increased bronchial striations at that time. Agglutination test for brucellosis 4 years later was positive up to a dilution of 1 in 40. An X-ray of the

spine however did not show any evidence of osteoarthritis of the spine or lipping of the lumbar vertebrae. She was treated with vaccine and very much relieved of her pains.

*L.*—A twenty-six years old lady, wife of a tonga driver was admitted with the complaint of arthritis of the left knee and fever of 2 months' duration. Previously she had pain in the shoulder and elbow joints and the right knee, and 22 days previously she suffered from sciatica of the right side. Physical examination revealed enlargement of liver and spleen each 2 fingers below the costal margin. X-ray of the left knee did not show any bony lesion. Agglutination test for brucellosis was positive up to a dilution of 1 in 40.

*S. D.*—A forty years old shop assistant had 4 waves of fever each wave lasting 2½ months, 9 days, 4 days, and 10 days respectively, with apyrexial intervals of about one week in between the waves. During the 1st wave of fever he had severe neuritis of the right arm. The pain started from the right side of the neck and went down the arm and forearm. His agglutination test for Brucellosis was positive up to 1 in 2,560 even 5 months later.

*D.B.*—A forty-five years old lady had a continuous pyrexia of 3 months' duration. This was variously treated for malaria, typhoid and hepatitis. She was relieved of this continuous fever but later used to have fever for 2-4 days every week. Five months later she had great pain in the right side of the neck. The pain radiated downwards to the right arm, and forearm. There was no sensory loss. She also complained of great general weakness and pain in the small joints of her hands. Her total leucocytic count was 5,400; the differential count was, polymorphs 37 per cent, lymphocytes 61 per cent, and basophils 2 per cent. Her agglutination test for brucellosis was positive up to 1 in 500.

*B.D.*—A fifty-five years old lady complained of severe neuralgia of the left arm of 10 years' duration and neuritis of the right arm of six months' duration. The pain was so great that she had to tie both her arms with her 'dopatta'\* at night. She also complained of general weakness and pain in her feet. Ten years previously she had suffered from a continuous fever of 10 days' duration. This fever later on became un-

\* Scarf.—EDITOR, *I.M.G.*

dulant and she suffered for one year. She was treated with the vaccine. She was completely relieved of her neuralgias after 8 injections. She also felt stronger after the injections. Agglutination test was however negative in her case. She was diagnosed on the strength of positive history and specific response to treatment.

*S.*—A forty years old lady complained of great pain along the lower ribs on both sides of the chest. She had pains in the arms, forearm, legs and thighs, and felt very weak. She also complained of pain in the back, a feeling of numbness in her body, loss of sleep, headache, feeling of heat in the feet, and feeling of cold in all the rest of her body including the head. She had nine months previously suffered from one month's continuous fever which had relapsed 2 months later. She looked pale. She had a hæmoglobin percentage of 10.9 gm. and R.B.C. were 3.5 million. Her agglutination test for brucellosis, 9 months after her first wave of fever was positive up to 1 in 80. This was a case of chronic brucellosis with costalgia as the main complaint.

*G.D.*—A forty years old labourer complained of severe pains beginning in the buttocks and going down the thighs and legs. The pains started at about 5 p.m. and lasted the whole night. Patient used to sweat profusely at night and could not sleep due to the severity of the pains. He was forced to give up his work for 2 months. There was a history of a typhoid-like fever one year previously. Agglutination test for brucellosis was positive up to 1 in 80. He responded specifically to *Brucella* vaccine.

*R.B.*—A fifty-five years old lady complained of severe pain starting in the lumbar region of the back and going down the left buttock, the back of the thigh and leg down to the heel. The duration was six months. Two years previously she had similar pain on the right side. She did not remember having suffered from undulant fever but her agglutination test for brucellosis was positive up to 1 in 40.

#### Summary

Neuralgias, brachial, sciatic and others occur in brucellosis. A few cases in which patients suffered from sciatic and brachial neuralgias in the acute and chronic phase of the disease are described. Costalgia is a common symptom of brucellosis. It is emphasised that in brachial

and sciatic neuralgias the possibility of brucellosis, acute or chronic should be kept in mind.

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## ACTIVITIES OF ALKALINE PHOSPHATASE IN HEALTH AND DISEASE: A REVIEW OF 185 HOSPITAL CASES

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THERE are some enzymes which frequently show wide deviations from the normal under certain pathological conditions. The enzyme phosphatase is one of them. It is an esterase and belongs to the group of phosphatases with which the clinicians are very much concerned. It reacts with esters and hydrolyses them with the liberation of inorganic phosphate.

There are three distinct types of phosphatases, *viz.*, the monoesterase, diesterase and polyphosphatase types. Of these, the monoesterase type (phosphomonoesterase) comprises the common phosphatase which catalyzes the hydrolysis of esters containing one molecule of  $H_3PO_4$ . The diesterase type is of no clinical significance. The polyphosphatases are of much biochemical importance, one of which, the pyrophosphatase reacts with triphosphates, like the adenosine triphosphate of muscle and other tissues, containing three molecules of  $H_3PO_4$ . The monoesterase does not react with triphosphates nor the polyphosphatase reacts with monophosphates (Baldwin, 1952).