

SYPHILITIC BACKACHE

A SYMPTOM OF SYPHILIS OF THE SPINAL CORD, LUMBAR
MUSCLES AND VERTEBRAE WITH REPORT OF CASES *

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Among the many causes of backache, syphilis should be considered. Although backache of syphilitic origin is, in the majority of cases, a symptom of neurosyphilis, nevertheless, the subject may be more properly discussed by classifying backache as a symptom of syphilitic involvement of the spinal cord, lumbar muscles and vertebrae.

BACKACHE DUE TO SPINAL CORD SYPHILIS

Backache of syphilitic origin is in most instances a symptom of spinal cord syphilis. In this condition the underlying pathology is meningeal. The neurologic sensations are in reality produced by irritation of the posterior sensory roots, and these are irritated in turn by the thickened and inflamed cord membranes through which they pass. Although clinically it is impossible to determine whether these root symptoms are caused by a root neuritis which is independent of the meningitis or by the meningitis and its consequent effect on the roots, as a matter of pathologic observation, rarely, if ever, isolated involvement of either the roots or cord occurs, although frequently a disproportion exists between the involvement of the spinal roots and the cord itself.

A root neuritis may arise in other ways. The roots may be compressed by the specifically inflamed membranes, or the inflammation may extend from the membranes into the roots themselves. In this way the individual nerve fibers are secondarily involved. Inflammation may also arise from the specifically diseased vessels. In addition to these forms of involvement, gummas may become localized in the roots. In very rare instances, a root neuritis may arise from a syphilitic periostitis of the vertebrae.

In a specific meningitis involving the cord, the posterior surface is not only more frequently involved than the anterior surface, but the meningitis is more extensive and more intense in this region. It is usually most severe in the dorsal region, since there the spinal cord has the least resistance.

* Read before the College of Physicians and Surgeons, Section on General Medicine, Philadelphia, Oct. 25, 1920.

A syphilitic spinal meningitis may be acute, subacute or chronic, and may be present from the exanthematous period of the disease until many years later. The headache and backache encountered in the acute secondary period of syphilis are frequently meningeal in origin. This was recognized prior to the introduction of lumbar puncture by Quincke in 1891. Notably, Lang, in 1880, and others referred to these, as well as to other symptoms, as arising from spinal meningeal irritation, and pointed out that occasionally the meningeal irritation passes into a meningitis. In the light of present knowledge arising from spinal fluid examination in the acute stage of syphilis, we know that the spinal fluid at this time frequently shows a varying degree of abnormality, which doubtless manifests the severity of meningeal involvement to which the older writers referred.

Backache, a symptom of spinal cord syphilis, is usually a part of the meningeal syndrome. The meningeal symptoms, in general, are essentially the same as in the other forms of meningitis. These symptoms are: pain, which may exist between the shoulders or in the back, paresthesias, painful sensations and acute attacks of girdle pain, which radiates anteriorly around the lateral part of the chest. Hyperesthesia is present, and the tendon and skin reflexes are increased. Some writers (Erlenmeyer, Siemerling, Oppenheim and Lang) have emphasized the variability of the patellar reflexes. They are alleged to vary from an entire absence to an increase in short periods of time from day to day, or longer. The explanation given for this is the variation in swelling of the syphilitic infiltrated tissue which compresses the fibers which are responsible for the patellar reflexes.

It is frequently mentioned, first perhaps by the older French syphilologists, that the pain, as heretofore noted, is worse at night. Indeed, this has been stated in reference to other forms of syphilitic pathology. This statement has apparently been copied from textbook to textbook and, in my experience, so far as present day syphilitic pathology is concerned, this tautology does not constitute reality. In addition to these sensory irritative symptoms, there are also symptoms of motor irritation in the form of tension in the musculature, which may increase the contractions. Backache, stiffness and tiredness are the chief complaints of the patient. One finds clinically a rigidity of the back, combined with a localized or diffuse tenderness to percussion of the vertebral column. In addition, movement may be painful.

This syndrome may exist in a varying degree and for a long period of time. The clinical picture may be modified by an extension of the pathologic condition to the cord proper. The pathologic lesions may be numerous and disseminated, and the clinical picture is therefore a variable one. Indeed, further discussion would involve a discussion of

the subject of cerebrospinal syphilis. However, it may be mentioned that after the pathologic process has attacked the conduction tracts, symptoms of sensory and of motor involvement will of necessity follow, and the additional clinical features of meningomyelitis supervene.

In many of the cases under consideration, besides the objective symptoms of neurosyphilis already mentioned, evidence of involvement of other portions of the neuraxis may be present. An isolated involvement of the spinal cord in syphilis is exceptional, considerably more so pathologically than clinically. Fournier reports more than five times as many cases of cerebrospinal syphilis as the pure spinal type. Erb states that in his experience spinal cord syphilis of the nontabetic type occurs only one tenth as often as *tabes*.

The response to antisyphilitic therapy in these cases is proportional to the acuteness and duration of the pathologic process. The result of treatment and the prognosis are worse when the condition has progressed to irreparable secondary changes in the cord. An appropriate plea can therefore be made for a thorough history and examination of every syphilitic in order that treatment may be administered in the meningeal stage of neurosyphilis. The presence of a negative blood Wassermann reaction in this class of case would not be remarkable. If this laboratory evidence is taken as a criterion of the status of the syphilitic infection, and important subjective and objective evidence of syphilitic involvement of this part of the neuraxis, which is relatively not a silent one, is not searched for, it may insidiously progress to a parenchymatous involvement. The spinal fluid in these cases is always positive. The pleocytosis in a measure depends on the severity of meningeal involvement. The Wassermann reaction may be positive in both high and low dilutions of spinal fluid. The colloidal gold reaction shows changes in the nature of a syphilitic curve.

Cases 1, 2 and 3 are illustrative of backache due to spinal cord syphilis.

BACKACHE DUE TO SYPHILIS OF THE LUMBAR MUSCLES

Under the heading of muscle involvement may be placed the backache which may be present in the acute secondary stage of syphilis. In this stage, it is either meningeal in origin, or a toxic expression of the acute spirochetemia. In the latter instance, it is part of the malaise present in the rather severe acute cases. It may be the chief complaint of the patient and may appear for some time prior to the secondary eruption. There is backache of this description in Case 4. The patient complained of malaise, headache and backache of several weeks' duration. When first seen, he was obviously sick—the temperature ranged from 102 to 105 F., for the first three days, and from 104 to 106 the

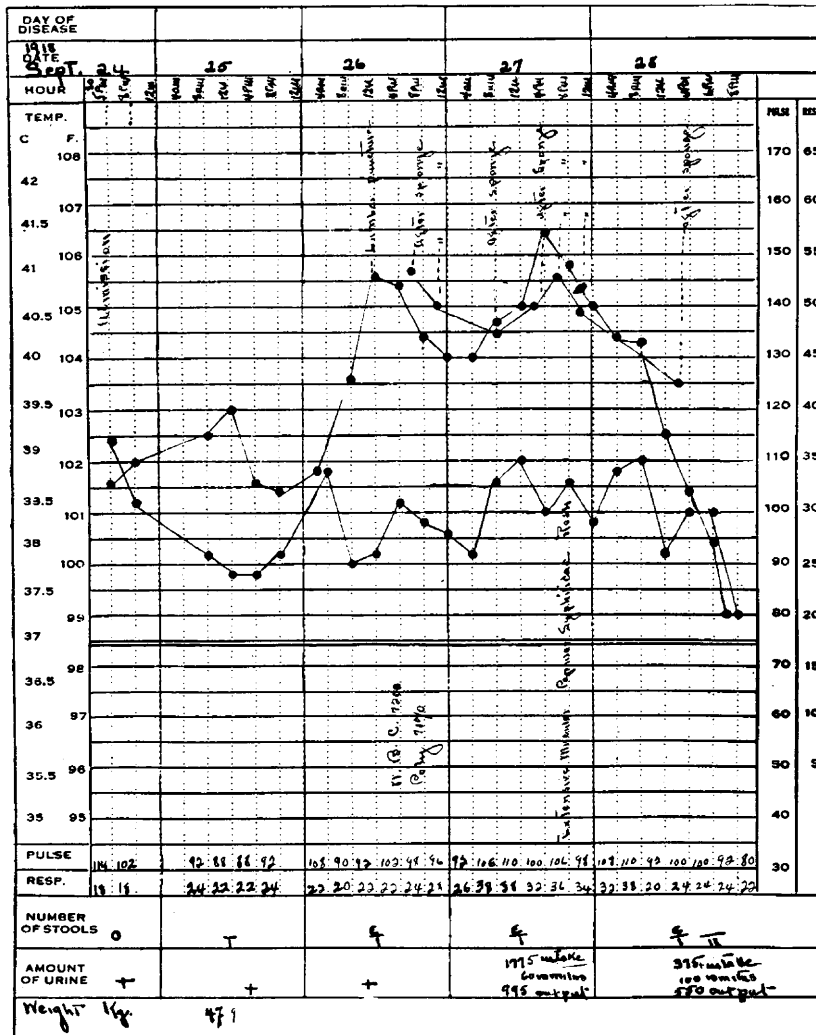


Fig. 1.—Temperature curve in Case 1 of acute secondary syphilis. Within thirty hours after the appearance of the eruption, the temperature dropped from 106.5 F. to 99 F. This fall in temperature by crisis after cutaneous manifestation is characteristic of the fever in acute secondary syphilis.

following twenty-four hours (Fig. 1). It is of interest to note that on the appearance of the diffuse maculopapular syphilid, the temperature dropped by crisis to normal. An internist, who saw the patient prior to the appearance of the eruption, made a tentative diagnosis of typhoid fever. This disease was rightly suspected from the history, the appearance of the patient, the temperature curve, the relatively lowered pulse rate, the enlargement of the spleen and the blood picture. In addition, a few scattered, faint macular lesions suggested the roseola of typhoid fever. These lesions were early appearing macular syphilids. Although some of the characteristic symptoms of typhoid fever were lacking, this would not have precluded the diagnosis of typhoid since the clinical picture of the disease is not always definite. The case is an instance of the simulation of typhoid fever by acute secondary syphilis.

In view of the negative spinal fluid in Case 1, it may be pointed out in passing that lumbar puncture, performed in the acute untreated stage of syphilis, is not without untoward consequences, that is, if the puncture is faulty and blood is obtained. This statement is based on experimental knowledge that blood, as well as other substances, when injected into the spinal fluid, acts as an irritant to the meninges and apparently causes a definite let-down in the meningeal-choroidal barrier between the blood and spinal fluid. In this way it is possible experimentally to infect the neuraxis with an infection from the blood. Indeed, simple lumbar puncture may constitute such an irritant. This possibility has been demonstrated by the work of Flexner and Amos¹ on poliomyelitis, Weed² and his associates on streptococcic infection in cats, and by Mehrtens and MacArthur's³ studies of the arsenical content of the spinal fluid after various methods of treatment.

Backache due to syphilis may rise through syphilitic involvement of the lumbar muscles, although these muscles are not the ones commonly involved. However, it is possible for syphilis to involve any group of muscles.

Very little has been added to our clinical knowledge of syphilitic disease of the muscles since its first recognition by Theodosius in 1553. Excluding the muscles of the tongue and heart, syphilitic involvement of the muscles is rare.

1. Flexner, S., and Amos, H. L.: The Relation of the Meninges and Choroid Plexus to Poliomyelitic Infection, *J. Exper. Med.* **25**:525 (April) 1917.

2. Weed, L. H.; Weyeforth, Paul; Ayer, J. B., and Felton, L. D.: The Production of Meningitis by Release of Cerebrospinal Fluid, *J. A. M. A.* **72**:90 (Jan. 18) 1919.

3. Mehrtens, H. G., and MacArthur, C. G.: Therapy of Neurosyphilis, Judged by Arsenic Penetration of Meninges, *Arch. Neurol. & Psychiat.* **2**:369 (Oct.) 1919.

Backache, and indeed myalgia in other parts, occurring in the acute stage of syphilis, is more likely a toxic expression of the acute spirochetemia, than a myositis.

Comparatively early in the infection, a diffuse interstitial myositis may appear. This condition may affect any muscle but particularly one of the flexors and especially the biceps. It is insidious in onset and characterized by pain, which usually develops concomitantly with contraction and swelling of the muscle. The patient complains of pain and inability to straighten the joint. The muscle is tender and feels firm and thickened, and an attempt actively to straighten the joint causes pain. Such an involvement is seen in Figure 2. Later in the disease, the commoner form of syphilis of the muscle, a gumma, may form

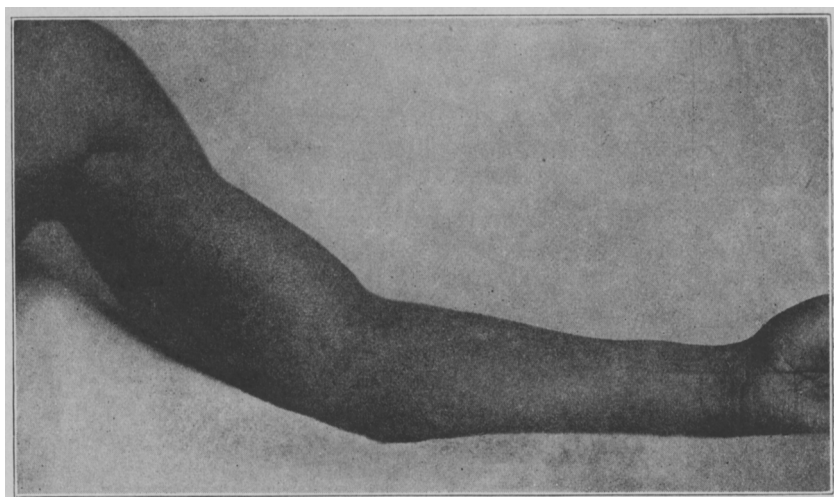


Fig. 2.—One type of syphilitic myositis involving the biceps. The history of syphilitic infection was negative. The involved muscle was swollen, painful on motion and tender to the touch. The onset was gradual and apparently causeless; other clinical evidences of syphilis were present. The blood Wassermann reaction was + + + +. After antisyphilitic therapy all subjective and objective symptoms disappeared. No local treatment was applied.

in one or more muscles. Those usually involved are the muscles of the arm and leg. The involvement may be localized or generalized or a combination of the two forms. In the localized form, a firm infiltration, accompanied by pain, occurs within the muscle.

The gummatous masses may break through the skin, resulting in an ulcer, or they may retrogress, causing a contracted or shrunken muscle. In the generalized form, there are pain and swelling of the muscle, which is firm to the touch. The muscle may become adherent to surrounding structures, causing impairment of motion. When the two

forms are combined, individual gummas are palpable and the muscle becomes uneven in places and shortened; at other points, the gummas may break down, causing ulceration and suppuration. Rarely the whole process ends in calcification and ossification.

BACKACHE DUE TO SYPHILIS OF THE VERTEBRAE

Although syphilis frequently involves the osseous system, notably the skull, clavicle and tibia, it rarely involves the vertebrae. Syphilitic involvement of the vertebrae is most often seen in the cervical region. Indeed, some writers view with skepticism its alleged occurrence in the dorsal and lumbar regions. Many of the reported cases of syphilis of the vertebrae have been mistaken for tuberculosis, and Leyden⁴ rightly states that the diagnosis of syphilitic vertebral exostosis has been too lightly made. However, there have been reported a number of authentic cases of syphilis of the vertebrae, including the dorsal and lumbar regions, in which the diagnosis was confirmed at necropsy.

In 1904, Neumann⁵ analyzed fifty-five cases, which he collected from the literature. The cervical region was involved in 65 per cent. of the cases, and the dorsal and lumbar regions in 31 per cent. Ziesche,⁶ in 1911, analyzed a total of eighty-eight cases reported in the literature. The cervical region was involved in 69 per cent. of the cases and the dorsal and lumbar regions in 23 per cent. In 1915, Hunt⁷ reviewed the subject, with a report of four cases, which made a total of 100 authentic cases reported in the literature.

The cervical region is more frequently involved because of its proximity to the cranial bones, resulting in an extension of the disease from this region. The cervical vertebrae may also become involved through a direct extension from pharyngeal gummas.

Unlike tuberculosis, syphilis is more likely to affect the spinous and transverse processes than the bodies of the vertebrae. Pathologically, such involvement is seen as a periostitis and osteitis, which may progress to necrosis and sequestration of bone. There is considerably less likelihood of pus formation with the development of a "cold abscess," as seen in tuberculosis of the vertebrae.

In the symptomatology of this disease, there is no characteristic symptom which serves to distinguish it from other pathologic condi-

4. Leyden, E.: Ueber ein Fall von syphilitischer Wirbelerkrankung, Berl. klin. Wchnschr. **26**:461-462, 1889.

5. Neumann, I.: Ueber syphilitischen Erkrankungen der Wirbelsäule, Wien. med. Presse **45**:14-19 (bibliography), 1904.

6. Ziesche, H.: Ueber die syphilitischen Wirbelentzündung, Mitt. a. d. Grenzgeb. d. Med. u. Chir. **22**:357-388 (bibliography), 1910-1911.

7. Hunt, J. R.: Syphilis of the Vertebral Column, Am. J. M. Sc. **148**: 164-179 (bibliography), 1914.

tions of the spine. The onset may be acute, or chronic. Pain is the predominating symptom. It may be dull and confined to the involved vertebrae, or acute and lancinating, following the distribution of the secondarily involved nerve roots. A secondary involvement of the spinal cord and its membranes occurs less frequently than an involvement of the brain from disease of the skull. Hunt states that neural complications occurred in 25 per cent. of the 100 cases reported in the literature up to 1915.

Some writers say that the pain is worse at night. On examination, tenderness and rigidity are found to be present over the involved area and there is obliteration of the normal vertebra curve. Deformity may

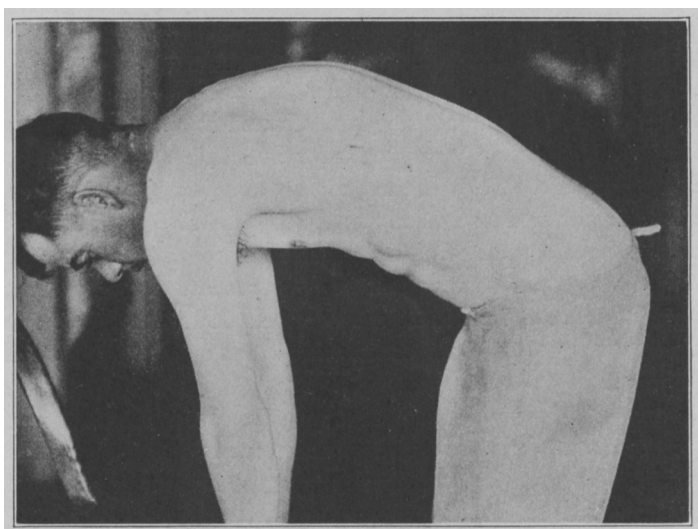


Fig. 3 (Case 5).—Obliteration of the dorsolumbar curve. Roentgenographic examination revealed necrosis of the body of the fifth lumbar vertebra, which was probably tuberculous, the symptoms of which appeared after syphilitic infection.

occur, which, when present, is consistent with the degree of pathologic involvement.

The differentiation of syphilitic involvement of the vertebrae from tuberculosis is, in some cases, difficult. The foregoing considerations are differential features. The roentgen ray is a valuable means of establishing a differential diagnosis. Indeed, in most cases it is the only way in which a diagnosis can be made.

If backache in a syphilitic is due to some pathologic involvement of the lumbar vertebrae, it is considerably more likely to be tuberculous than syphilitic. This is particularly true if syphilis has been recently acquired, since this disease is likely to activate latent tuberculosis. The

association of the two diseases is a very baneful one. Sergent⁸ presents considerable clinical evidence to show that syphilis plays an important part in the causation of tuberculosis in its many clinical manifestations. In this regard I may appropriately recall the following statement of Landouzy: "La syphilis fait le lit de la tuberculose," and that of Fournier, who stated that he would not hesitate to inscribe syphilis in the etiologic chapter of pulmonary tuberculosis.

In view of these considerations it becomes apparent how easily tuberculosis of the vertebrae, existing in a syphilitic, can be mistaken for syphilis.

Improvement following antisyphilitic treatment does not prove the syphilitic nature of the pathologic condition, since tuberculous lesions in a syphilitic are frequently improved after such treatment. Such an instance is seen in Case 5 (Fig. 3) of a man, recently infected with syphilis, who complained of backache. There were tenderness and rigidity of the lower lumbar region, and the roentgenogram disclosed necrosis of the body of the last lumbar vertebra. The appearance suggested tuberculosis, rather than syphilis. The backache improved following treatment with arsphenamin, mercury and iodid.

Nonna⁹ reports cases of vertebral necrosis in syphilitics, the subjective symptoms of which disappeared following antisyphilitic therapy. However, later the patients died of pulmonary tuberculosis, and necropsy demonstrated the vertebral involvement to be tuberculous in nature.

BACKACHE DUE TO SYPHILITIC SYNOVITIS OF THE SPINAL JOINTS

In addition to a syphilitic involvement of the vertebrae, backache may be caused by a synovitis of the spinal joints. This involvement is perhaps the commonest lesion in syphilis of the spine. Indeed, Whitney and Baldwin¹⁰ have frequently observed its presence in syphilitics. In their series of 100 syphilitics examined for joint lesions, with special reference to the condition of the spine, they observed twenty-six patients with normal spines. Six patients presented doubtful findings, the remaining sixty-eight patients presented spinal abnormalities of some kind; of these, all but four were of a type which they considered more or less characteristic of syphilis.

A syphilitic synovitis occurs relatively early in the disease, although the deformity and stiffness it produces doubtless remain indefinitely.

8. Sergent, Emile: *Syphilis et Tuberculose*, Paris, Masson et Cie, 1907; *Presse méd.* **16**:657 (Oct. 14) 1908.

9. Nonna, Max: *Syphilis and the Nervous System*, Ed. 2, Philadelphia, J. B. Lippincott Company, 1916, p. 228.

10. Whitney, J. L., and Baldwin, W. I.: *Syphilis of the Spine*, J. A. M. A. **65**:1989 (Dec. 4) 1915.

Usually three or four vertebrae are affected, although the process may attack more, indeed the whole dorsal region. Pain and backache are not prominent symptoms but rather deformity, localized stiffness and hypotonicity of the uninvolved spine, pelvic and hip joints. Roentgen-ray examination of the spine in this condition is negative.

The syndrome of this process as described by Whitney and Baldwin is as follows: Deformity when present consists of a prolongation of

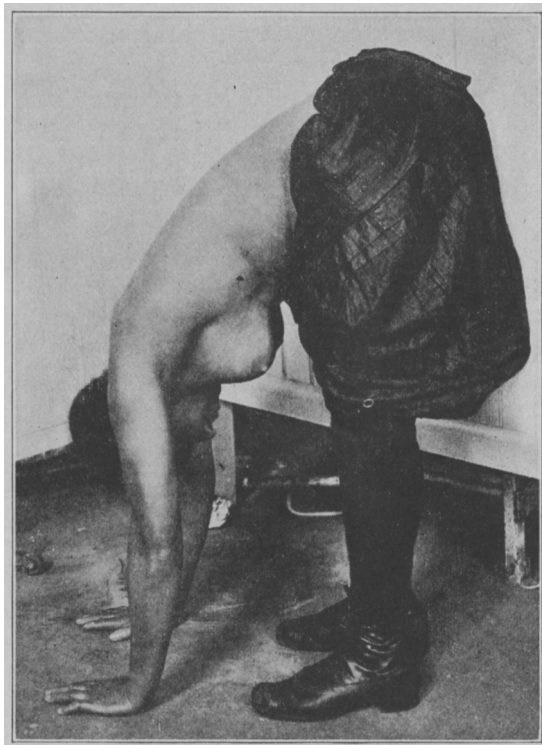


Fig. 4.—Syphilitic synovitis of the spinal joints, showing hypotonicity and obliteration of the normal dorsolumbar curve.

the dorsal curve into the dorsolumbar region, where normally there is a concavity, or a flattening. There is a localized stiffness, at first due to spasm, and later to adhesions. Hypotonicity of the ligaments and muscles of the sacro-iliac joints and of the hips is a predominating symptom. This is manifested by the ease with which the patient can place the palms on the floor with knees straight (Fig. 4). This symptom is more marked in the cases of neurosyphilis. It is interpreted by Whitney and Baldwin as a sign of syphilis rather than as a sign of tabes, which is the usually accorded interpretation.

The two symptoms, localized stiffness and hypotonicity, are regarded by Whitney and Baldwin as almost pathognomonic of syphilis. One patient, a syphilitic (Fig. 4) presented the foregoing symptoms of syphilitic synovitis of the spine. She complained of backache. There was obliteration of the normal spinal curve with areas of restricted mobility, together with a marked degree of hypotonicity which is well shown in the illustration. The blood Wassermann was + + + +. There was no clinical evidence of neurosyphilis although the spinal fluid was not examined. A roentgen-ray examination of the spine was negative.

REPORT OF CASES

BACKACHE—SPINAL CORD SYPHILIS

CASE 1.—History.—A man, aged 48, gave a history of a genital lesion twenty years before for which only local treatment had been received. He had been married twelve years. His wife was living and was said to be well. There were no living children, although there had been a stillbirth ten years before, but there had been no miscarriages. The chief complaint was constant backache, of from three to four years' duration, localized in the lower lumbar region. He had been treated by many physicians. He complained also of headache. There were no other subjective symptoms of neurosyphilis.

Physical Examination.—This disclosed nothing of any importance excepting leukoplakia of the buccal mucous membrane.

Neurologic Examination.—The pupils were unequal, irregular in contour, and reacted sluggishly to light. The patella reflexes were exaggerated. The blood Wassermann reaction was + + + +. The spinal fluid contained 56 lymphocytes per c.mm.; globulin was positive, and the Wassermann reaction with 0.8 c.c. was + + + +. The colloidal gold reaction was 0013321100.

Treatment.—After arsphenamin and mercurial treatment, the backache improved. It finally disappeared during the continuation of treatment.

CASE 2.—History.—A woman, aged 38, who had been married thirteen years, had lost one child at the age of 3 months; there had been no miscarriages. Salpingo-oophorectomy had been performed nineteen years before. The chief complaint was backache, which had been persistently present for the last eight months. The backache involved the lower lumbar and sacral region, and at times there were sharp shooting pains radiating anteriorly around the lower costal areas. She had had headache for about the same period of time.

Neurologic Examination.—The pupils were irregular and unequal. Light and accommodation reflexes were absent in the right eye. The left eye reacted to accommodation, but did not react to light. The biceps, triceps and patellar reflexes were exaggerated. There was no Babinski sign or ankle clonus. There were no sensory disturbances and no paralysis. She had good sphincter control. The blood Wassermann reaction was + + + +. The spinal fluid contained 100 lymphocytes per c.mm.; globulin was positive, and the Wassermann reaction with 0.8 c.c. was + + + +. The colloidal gold reaction was not made.

Treatment.—Following the administration of arsphenamin, mercury and potassium iodid, there was considerable improvement of subjective symptoms.

CASE 3.—History.—A woman, aged 32, had been married sixteen years. Her husband was living and alleged to be in good health. There were two living

children. She had had three miscarriages. Her chief complaint was acute spasmodic pain in the sacral and right gluteal regions. These had been of sudden onset two weeks before with acute stabbing pains in the right hip which radiated downward over the gluteal region into the thigh. She had had backache for some weeks. At times she experienced paresthesia in the lower extremities.

Neurologic Examination.—The pupils were equal and regular in size and reacted to all reflexes. The patellar reflexes were exaggerated. There was no ankle clonus or Babinski reflex. She had good control of the sphincters. There was no loss of muscular power. The blood Wassermann reaction was + + + +. Spinal fluid examination revealed 125 lymphocytes per c.mm. The globulin was positive, and the Wassermann reaction with 0.8 c.c. was + + + +. The colloidal gold reaction was not made.

Treatment.—The subjective symptoms entirely disappeared following anti-syphilitic treatment.

BACKACHE—ACUTE SECONDARY SYPHILIS

CASE 4.—*History.*—A Filipino, aged 24, gave a history of headache, backache, arthralgia, and malaise of about three weeks' duration. He had had a genital lesion for from five to six weeks.

Physical Examination.—The patient was frail, underweight and obviously sick. The mouth, teeth and tongue were negative. The throat was congested. Examination of the heart and lungs disclosed nothing of any importance. There was enlargement of the lymph nodes, excepting the epitrochlear and occipital. Examination of the abdomen disclosed an enlargement of the spleen. There were a few scattered macular lesions suggestive of the roseola of typhoid fever. The bones and joints were negative. There was a lesion on the shaft of the penis, which was ulcerated, nonindurated and crusted. The temperature and pulse curves are given in Figure 1. A tentative diagnosis of typhoid fever was made pending laboratory studies.

Laboratory Examination.—Blood culture was negative. The Widal test was negative. Blood count revealed: leukocytes, 7,200, and polymorphonuclears, 71 per cent. The urine contained a trace of albumin and granular cysts. Dark-field examination of the genital lesion was negative. The patient had previously applied calomel. Dark-field examination of macular lesions was positive. The serum Wassermann reaction was + + + +. Spinal fluid examination revealed: cells, none; globulin negative; Wassermann reaction with 1 c.c. negative, and colloidal gold reaction 0011100000.

From the laboratory findings and subsequent clinical observation, the diagnosis of secondary syphilis became obvious.

BACKACHE—VERTEBRAL NECROSIS, SYPHILITIC (?)

CASE 5.—*History.*—A man, aged 26, with no history of tuberculosis in the family, gave a negative history, excepting for a chancre three years before which was followed by a secondary eruption. At that time, he received one injection of neo-arsphenamin and mercury by mouth for the following year. He had had no further treatment and no subjective symptoms until three months before, since which time he had been complaining of backache. The backache was of the nature of a dull localized pain in the lower lumbar region. It was worse when he was on his feet. He had no other complaint.

Physical Examination.—There was no evidence of pulmonary tuberculosis and no neurologic abnormality. There was a scar on the penis, and a gen-

eral adenopathy. Muscular rigidity was present in the lower lumbar region and there was an obliteration of the normal dorsal and lumbar curve (Fig. 3). There was tenderness on percussion of the lower lumbar vertebrae. Pain was present on jarring. The blood Wassermann reaction was + + + +. A roentgenogram of the lower lumbar vertebrae disclosed a necrosis of the body of the fifth vertebra, with considerable involucrum formation on the right. The roentgenogram suggested tuberculosis rather than syphilis.

SUMMARY

Syphilitic backache is classified as a symptom of syphilitic involvement of the spinal cord, lumbar muscles and vertebrae. In the majority of instances, it is a symptom of spinal cord syphilis.

Syphilitic backache, a symptom of syphilis of the spinal cord, is meningeal in origin and due to irritation of the posterior sensory roots. This involvement may be acute, subacute or chronic, and may be present from the exanthematous period of the disease until many years later. The symptom backache is a part of the meningeal syndrome. These symptoms in general are essentially the same as those in other forms of meningitis: pain, which may exist between the shoulders or in the back, paresthesias, painful sensations and acute attacks of girdle pain which radiate anteriorly around the lateral part of the chest. Hyperesthesia is sometimes present, and the tendon and skin reflexes are increased. In addition, there are symptoms of motor irritation. Backache, stiffness and tiredness are the chief complaints of the patient. Clinically, in addition to these neurologic abnormalities, there is rigidity of the back, combined with localized tenderness on percussion of the vertebral column. Other objective evidences of neurosyphilis are usually present, since an isolated involvement of the spinal cord is exceptional.

The usual spinal fluid findings in this condition are given. Case histories illustrating this type of syphilitic backache are presented.

A plea is made for a thorough history and clinical examination of every syphilitic in order that treatment may be administered in the meningeal stage of neurosyphilis rather than in the parenchymatous stage.

Backache Due to Syphilis of the Lumbar Muscles: The backache which is sometimes present in acute secondary syphilis is placed under this heading, although it is a toxic expression of the acute spirochetemia rather than syphilitic myositis. Syphilis of the muscles is discussed and various clinical types are presented.

Backache Due to Syphilis of the Vertebrae: A syphilitic involvement of the vertebrae is usually seen in the cervical rather than in the lumbar region. A brief review of the literature of syphilis of the vertebrae is given.

Syphilis is more likely to affect the spinous and transverse processes than the bodies of the vertebrae. The pathology of this condition is given. "Cold abscess" formation, which is usually present in tuberculosis, is considerably less likely to be encountered in syphilis.

In the symptomatology of this process there is no characteristic symptom which serves to distinguish it from other pathologic conditions of the spine. A secondary involvement of the spinal cord and its membranes is less likely to occur in syphilis than in tuberculosis.

The Differential Diagnosis of Syphilis of the Vertebrae: Syphilis may activate latent tuberculosis. This possibility must be considered in the presence of a pathologic involvement of the vertebrae in a syphilitic. The therapeutic test in these cases is not conclusive since tuberculous lesions in a syphilitic are improved after antisyphilitic treatment. A case history is given in which the necrosis of the lumbar vertebrae was probably tuberculous rather than syphilitic.

Backache may also be caused by a synovitis of the spinal joints. This involvement is the commonest lesion in syphilis of the spine. The syndrome of the process is this: Deformity, when present, is seen in a prolongation of the dorsal curve into the dorsolumbar region, where normally a concavity exists, or a flattening. There is a localized stiffness, at first due to spasm, and later to adhesions. Hypotonicity of the ligaments and muscles of the sacro-iliac joints and hips is a predominating symptom.

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