The ischemic lumbago : a further contribution to the lumbar type of intermittent claudication / J. Ramsay Hunt.

THE ISCHEMIC LUMBAGO

A FURTHER CONTRIBUTION TO THE LUMBAR TYPE OF INTERMITTENT CLAUDICATION

J. RAMSAY HUNT, M.D.

Associate Professor of Nervous Diseases, Columbia University College of Physicians and Surgeons

NEW YORK

In a previous paper I directed attention to the occurrence of a *lumbar type* of intermittent claudication.[1] This affection is characterized by a painful spasm of the muscles in the lumbar region following the exertion of walking or standing, which disappears promptly after a brief period of rest. The pain was bilateral, limited above by the twelfth rib and below by the crest of the ilium. The muscle mass corresponding to this region is composed of the sacrolumbar portion of the erector spinae group and the quadratus lumborum muscles, and receives the greater part of its blood-supply through the lumbar arteries, which take their origin from the abdominal aorta. A great part of the muscular effort of walking and standing will naturally call into activity these muscles, and the symptoms of intermittent claudication were ascribed to an interference with the blood-supply of this region, either by disease of the lumbar arteries themselves or of that section of the abdominal aorta whence these vessels take their origin. In this manner a reduction in the quantity of blood circulating in the affected region is produced. The blood-supply is sufficient when the muscles are at rest, but inadequate for the requirements of active muscular effort; hence the intermittent ischemic character of the symptoms.

In the present paper this clinical picture is the subject of further study, and is enlarged by the description of a strictly *unilateral type,* and of a milder form of lumbar

1. Hunt, J. Ramsay: The Lumbar Type of Intermittent Claudication, Am. Jour. Med. Sc., February, 1912.

intermittent claudication resembling lumbago in location and character of pain, but which is evidently vascular from its intermittent character, the *ischemic lumbago.*

CASE 1.—*Severe unilateral lumbar pains, occurring only on exertion, of the "ischemic type," in a woman aged 66, who has suffered from intermittent claudication of both lower extremities for ten years. The unilateral lumbar pains were always relieved by a brief period of rest and presented the typical character of the intermittent claudication.*

The patient has been under my care for intermittent claudication of both lower extremities for the past ten years. Her symptoms are typical of the disease and the case has been fully described in a previous paper.[2] The left leg is more affected than the right and there are the characteristic painful cramps, paresthesias and rigidity on exertion which disappear after a brief period of rest. The femoral and popliteal arteries pulsate equally on the two sides; but the pulsation in the right dorsalis pedis is thread-like and is often not palpable, and there is only a feeble pulsation in the left posterior tibial. The left dorsalis pedis and the right posterior tibial show good strong pulsations.

Since my original report there has been practically no change in the condition of the lower extremities. The patient, however, has developed symptoms of diabetes in a mild degree which are readily controlled by diet. The amount of sugar varies from 0.3 to 1 per cent. Heart shows hypertrophy of left ventricle. Marked accentuation of aortic second sound. Systolic blood-pressure, 200 mm. General neurologic examination is negative.

Onset of Lumbar Symptoms.—In April, 1912, the patient first noticed pain in the lumbar region of the left side when very tired and after muscular exertion. This was described as an aching and throbbing sensation and it gradually increased in severity and in frequency. It is strictly limited to the left side of the vertebral column, below the ribs and above the crest of the ilium. When very severe there is a tendency for the pain to extend somewhat laterally, but never beyond the midaxillary line. At times the pain is quite sharp and knife-like in character, or as if an iron claw were gripping her in the loin. There is also at times a bursting sensation. These subjective symptoms are accompanied by a distinct feeling of weakness in the left side of the lumbar region after prolonged muscular effort. She says that the muscles do not feel as if in cramp or spasm, but there is often a swollen sensation as if there were "something there like an abscess." I have never been able, however, to make out any

2. Hunt, J. Ramsay: Intermittent Claudication and Allied Syndromes due to Angiosclerosis of the Extremities, Med. Rec., New York, May 27, 1905.

swelling or enlargement. Sometimes after the pains have persisted for a time the muscle mass is tender to deep pressure, but the tenderness is never of long duration. The pains come on only while the patient is walking or standing; or when sitting with the back unsupported, as in writing at a desk. All pain disappears promptly after a brief rest in the recumbent posture, and even the most violent paroxysms vanish after a short rest in a relaxed posture, although a dull aching and occasional shooting pain may last for several hours, if she has forced herself much during the day. At night in bed she has no pain.

In the morning on arising she is quite free from pain or stiffness in the back, but the exertions of dressing soon bring on the pain again. It never extends to the right side of the vertebral column. She has noticed that corsets make her less susceptible and that efforts in the early morning without this support are particularly prone to produce pain.

Her spine is perfectly normal in contour and mobility and there is no pain in the sacro-iliac articulation. Passive and active movements of the hip-joint in the recumbent posture are free and cause no pain.

I have seen the patient at regular intervals since the onset of these symptoms in April, 1912, and feel convinced that the unilateral symptoms in the lumbar region are of the same nature and have the same cause as the intermittent claudication in the lower extremities. The case is of interest as showing that intermittent claudication of the lumbar region may occur as a unilateral affection, and is due to a diminution in the flow of blood through the lumbar arteries of the affected side, the obstruction being situated in the arteries themselves or at their origin in the abdominal aorta.

CASE 2.—*Unilateral intermittent claudication of the lumbar region, complicating aneurysm of the abdominal aorta.*

The patient is a man aged 51, with aneurysm of the abdominal aorta, whom I saw through the courtesy of Dr. David Bovaird. He is a plumber with a history of lues thirty years previously. Since June, 1912, he has been subject to pains in the left lumbar region which appear only after exertions as in walking, standing or in certain bending postures which bring into action the erector spinae group. The pain is quite severe and cramp-like and is localized in the muscles of the lumbar region to the left of the vertebral column. The intermittent pain and spasm have gradually grown worse, so that a walk of two or three blocks now is sufficient to bring on the painful symptoms. At such times there is also a sensation of weakness in the back. It is invariably relieved by a short rest

from two to three minutes, either by sitting or by leaning up against a wall or other support. The pain always recurs in the same manner and in the same location after exertion, and it invariably disappears after a brief period of rest. While sitting or in the recumbent posture he is quite free from pain. During the night he suffers no pain or cramp in the lumbar region, but as soon as he is dressed and leaves the house, the pain appears after covering a given distance. At first this was several blocks, but now from two to three blocks is the distance limit. There are no subjective symptoms referable to the upper or lower extremities.

Physical Examination.—June, 1913: The man is thin and anemic from loss of blood—"gastric hemorrhages." Red blood-corpuscles, 2,432,000; hemoglobin, 30 per cent. The urine is free from albumin or sugar. The cardiac impulse is felt in the fourth interspace 8 cm. to the left of the midline; action is regular and of good force. There is a soft systolic bruit over the base in the pulmonary area which is transmitted to the axilla; there are no diastolic murmurs. The right limit of cardiac dulness reaches to the sternal border. Posteriorly over the lower portion of the left side of the chest there is an area of pulsation extending from the spine to the postaxillary line. There is also a heaving pulsation in the left upper epigastric region, and bimanual palpation shows definite expansile character.

Roentgenoscopy reveals aneurysmal dilatation of the upper portion of the abdominal aorta. Neurologic examination is negative.

The ischemic symptoms in this case are also unilateral in distribution, and are of special interest because of the association with aneurysm of the abdominal aorta. It is well known that intermittent claudication of the lower extremities may occur as a sequel to aneurysm of the larger vessels of the lower extremities. Indeed, Charcot's original description of the syndrome was based on a case of aneurysm of the iliac artery.

It is possible that further observations will demonstrate the occurrence of intermittent claudication of the lumbar region as an early symptom of abdominal aneurysm, and it is therefore well to bear in mind this possible association.

CASE 3.—*Ischemic lumbago in a man aged 70.*

The patient retired from his business of storekeeper three years ago, since which time he has lived quietly in a small town in New Jersey. He has always been moderate in the use of alcohol and tobacco and never acquired syphilis. About two years ago he first noticed that during long walks an ach-

ing pain developed in the lumbar region on both sides of the vertebral column. If he rested for a few minutes all trace of the pain promptly disappeared and he was able to resume his journey. About the same time he noticed that the feet would become numb during the walk, and that this also passed off after the short rest. Since the appearance of these two symptoms, pains in the lumbar region and numbness of the feet, he has never failed to experience them during a walk and never at any other time unless he stands constantly in one position, when the same symptoms make their appearance.

As time wore on, the aching pains in the back seemed to come on more often and after going shorter distances, so that now a quarter to half a mile never fails to elicit the symptoms. A short rest of three or four minutes brings immediate relief. The patient never has the pain in the recumbent or sitting posture, unless he is in an uncomfortable chair which does not support the back and he leans forward.

The pain corresponds in a general way to that portion of the erector spinae group which is situated below the twelfth rib and above the iliac crest, and is on both sides of the column. It does not extend laterally beyond the posterior axillary line. It is an aching pain and if he continues walking for a time after it appears it becomes quite severe, and the muscles feel as if in cramp, the affected portion of the back becoming weak and stiff.

The sensations in the lower extremities consist solely of paresthesia of the feet; there is no pain and the muscles of the feet and legs do not cramp.

Since the onset of these symptoms two years before, they have recurred constantly as the result of exertion, and at no time has the patient been able to walk the usual distance without their appearance. He asserts that changes of weather and the seasons have no appreciable effect on the severity of the occurrence of the symptoms.

Six months ago he developed a severe sciatic neuritis with the accompaniment of pain along the course of the nerve, and paresthesia of the left foot and leg. Later the muscles of the calf wasted and there was a tendency to foot-drop on the affected side. It was for this affection that he presented himself at the Vanderbilt Clinic and was referred to the neurologic department.

There is no pain in the right leg, and the action of the sphincters is normal. For some months the patient had had occasional pain in the left shoulder-joint which shows some limitation of movement. The shoulder pain and the sciatica are both aggravated by changes of weather.

Physical Examination.—The man is senile in appearance, with well-marked arcus senilis. The dorsal region of the spine shows a slight senile kyphosis. The movements are normal

and free from pain or any special rigidity. There is no tenderness on pressure. After bending movements of the spine have been practiced for about five minutes, the same aching pain appears as after walking, and rapidly progresses to a severe painful spasm, which quickly passes off in the recumbent or reclining posture. The first heart-sound is weak and there is a systolic murmur at the apex; the second sound is accentuated. The femorals, popliteals, posterior tibials and dorsalis pedis arteries pulsate equally on the two sides. The same is true of the radials. There is active pulsation of the abdominal aorta palpable in the epigastric region, but no dilatation can be demonstrated. The urine is free from albumin or sugar. Roentgenogram of the lumbar region is negative.

Neurologic examination shows the residual signs of old sciatic neuritis, paresis of the peroneal and extensor groups of the left leg, with atrophy of the muscles and diminution of the left Achilles jerk. There are patches of anesthesia over the dorsum of the left foot and the outer side of the leg. The pupils are small and the reactions are difficult to test owing to old corneal opacities, the result of an inflammatory affection of the eyes forty years before. The knee-jerks are present and equal, as are also the tendon reflexes of the upper extremities. The plantar reflexes are normal.

The symptoms of lumbar ischemia in this case were of two years' duration and preceded the sciatic neuritis by one and one-half years. It was readily differentiated from the rheumatic affection of the lumbar region by the intermittent character, occurring only during muscular activity with complete cessation after a brief period of rest. Movements of the lumbar spine were normal and painless, unless the bending movements were continued, when the painful spasm was produced.

ISCHEMIC LUMBAGO

I think that there can be very little doubt, from the characteristic symptomatology presented by the cases recorded in this and in my earlier publication, that a condition, which may be termed "ischemic lumbago," or "intermittent claudication of the lumbar region," may occur both as a bilateral and as a unilateral affection. The recurrence of the symptoms regularly during muscular action and their prompt cessation during rest are characteristic of this type of lumbar pain; the blood-supply being sufficient in the passive state, but not equal to the increased demands during activity, with the

resultant pains, cramps and weakness in the affected muscles.

When one considers the frequency of arteriosclerotic changes in the abdominal aorta, the thought naturally arises that there is a relationship between such lesions and the intermittent weakness, stiffness and pains in the lumbar region occurring in advanced life. This is a senile type of backache of vascular origin, in which the symptoms are not so clearly defined as in those which I have just described, but which nevertheless bear an essential relation to the defective blood-supply, and is promptly relieved by the recumbent posture or rest in a comfortable chair. Such lumbar pains, cramps and weakness bear the same relationship to exertion as do the cases described in this paper, although less clearly defined and less acute, and are promptly relieved by rest. In cases of this character in which a definite relationship to exertion may be demonstrated, the possible vascular or ischemic origin from defects in the lumbar circulation should be considered.

DIAGNOSIS

Ischemic lumbago is readily recognized and differentiated from all other affections of the back by the following characteristics:

In ischemic lumbago there is a sensation of pain or painful cramp, which may be associated with a feeling of weakness or stiffness, localized in the muscles of the lumbar region. This may be bilateral or strictly unilateral in distribution and is limited above by the twelfth rib and below by the crest of the ilium. When severe the pain may radiate as far laterally as the mid-axillary line. The painful area is not tender to pressure, except after prolonged exertion, and then it is not of long duration. This pain is characterized by its intermittent character and absolute dependency on muscular exertion.

If there is no effort or strain on the muscles there is no pain. When the pain is induced, any posture which places the affected muscles at rest promptly produces relief, and the pain ceases.

For diagnostic purposes, bending movements of the spine may be used to induce the pain and demonstrate its local and intermittent character. The movements

of the spine are normal and in the beginning painless, which is an important distinguishing feature from lumbago of rheumatic origin.

In the cases which have come under my observation, the pain was not influenced by changes of weather, and this may be regarded as another point of difference in differentiating from the rheumatic lumbago, with which it is most likely to be confused.

All other affections of the spinal column and pelvic joints may be excluded by the complete freedom of pain in active and passive movements.

20 West Fiftieth Street.

Reprinted from The Journal of the American Medical Association
Feb. 28, 1914, Vol. LXII, pp. 671-674