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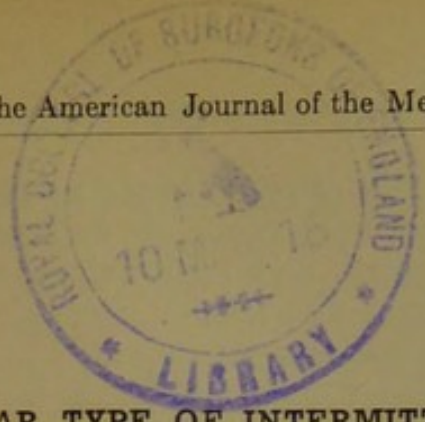

THE LUMBAR TYPE OF INTERMITTENT CLAUDICATION.

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The peculiar and very characteristic vascular disturbance, described by Charcot,[1] in 1858, as *Intermittent Claudication* has attained a place of considerable importance in symptomatology during the last few years. At the present time, a number of clinical types are recognized, which receive their special and distinguishing characteristics from that portion of the arterial system which is involved—the tibial, brachial, coronary, mesenteric, cerebral, or spinal arteries.

Charcot's original observations were made upon cases in which the large arteries of the lower extremity were involved, with a resulting condition of intermittent limping; a state of weakness, painful cramps and paresthesia developing in the extremity while walking, disappearing after a brief period of rest (paralysie douloureuse intermittente).

The peculiar feature of this clinical picture was the intermittent character of the symptoms, their appearance only during muscular activity and their rapid disappearance in the passive state.

This unusual complex of symptoms attracted very little attention for many years and it was not until after the revival of the subject by Erb,[2] in 1898, that it began to receive general attention and interest. Erb demonstrated conclusively that symptoms of *claudication intermittente* occur not only with disease of the large arterial trunks, but that they result even more frequently from lesions in the smaller ramifications of the arterial tree, with corresponding changes in the pulsation of the pedal arteries.

These symptoms may accompany all the commoner forms of arterial disease, arteriosclerosis, senile calcification, obliterating endarteritis, acute arteritis. It is, however, not only the organic changes in the vessel walls, but an associated *vasomotor neurosis*, a tendency to vascular spasm, which narrows the lumen of the

[1] Claudication Intermittente, Compt. Rend. et mém. de la Soc. de Biol., 1858, t. xii, p. 225.
[2] Deut. Zeit. f. Nervenheilkunde, 1898, Band xiii, S. 1.

vessels and diminishes the flow of blood to the parts, with a resulting ischemia, which is the direct cause of the symptoms. The two chief factors, angiosclerosis and angioneurosis, are therefore usually combined, although Oppenheim recognizes a benign, purely functional type due to vascular spasm.

Once the symptom complex was established in the lower extremity (leg type), it was but natural that other groups of cases should be differentiated and described as special types, corresponding to different portions of the arterial tree.

Oppenheim[3] called attention to its occurrence in the upper extremity (arm type), and not a few cases of this kind have been described. In one case, in which both legs and an arm were affected, the tongue was similarly involved (Determann[4]).

Of great clinical importance are the various visceral types of the disease, such as occur with lesions of the coronary artery (angina pectoris of Potain) and of the mesenteric arteries (Ortner[5]). It has also been observed in the central artery of the retina (Rosenfeld[6]). Such a case has come under my own observation, in which the arterial spasm and resulting pallor could be seen with the ophthalmoscope.

The condition is by no means infrequent in the cerebral arteries, often as a symptom and precursor of thrombosis. Déjerine[7] has recently given a graphic picture of intermittent claudication of the vessels of the spinal cord, with pain, weakness, and paresthesiæ of the lower extremities coming on during exertion and accompanied by exaggerated tendon reflexes, ankle clonus, and the Babinski reflex, all symptoms objective as well as subjective disappearing during rest.

The Lumbar Type of Intermittent Claudication. The type to which I desire to call attention may from its location in the lower portion of the back be termed the *lumbar type* of intermittent claudication. The nature of the symptoms and their intermittent character, occurring regularly during activity, ceasing always after a short rest, would exclude all other organic conditions save one of vascular origin.

It may be that some of the painful backs occurring in and after middle life, and regarded usually as rheumatic, may have a similar origin, cases in which the intermittent character of the symptoms is less clearly defined than the one which has come under my observation.

Case Report. Mr. M. G., aged fifty-one years, unmarried, a stockbroker by occupation, was referred to me from the Roosevelt Hospital in November, 1910. He is American born and has always lived in New York. For many years he has indulged exces-

[3] Deut. Zeit. f. Nervenheilkunde, 1900, Band xvii.
[4] Ibid., 1907, Band xcii, S. 154.
[5] Wien. klin. Woch., 1906.
[6] Deut. med. Woch., 1906.
[7] Rev. Neurologique, 1906, No. 8.

sively in the use of alcohol, usually whisky; on the average taking from ten to fifteen drinks a day, with not infrequent periods of debauch, during which times he would consume a quart of whisky a day, often for a period of several weeks. In addition to alcoholic excesses he is a heavy eater, and for many years has indulged in large quantities of rich food. For twenty years he has not used tobacco in any form. Twenty years ago he acquired syphilis, for which he received thorough treatment under the direction of a well-known New York specialist. Fifteen years ago he had a severe attack of articular rheumatism, but has had no rheumatic manifestations since that time. Has never had lumbago.

The trouble for which he consulted me began two years ago with pain in the lower part of the back, which came on only while walking. It was his custom at that time, and had been for some years, to walk to and from his place of business. He found that during these walks a pain would appear in the lumbar region and he would have to stand still a few minutes until it wore off. After standing a few minutes, usually leaning heavily against a fence or a lamp post so as to take "the weight and strain off the spine," as he expressed it, the pain would entirely disappear and he could resume his walk. While sitting, lying in bed, or on first rising in the morning, there was not a trace of pain or stiffness in the back. It developed only during his walk to the office.

As time went on he found it necessary to take more and more frequent rests, but always with the same result, a complete disappearance of the pain and perfect ability to continue his walk. In resting, it was necessary to take the strain off the muscles of the back by sitting, lying down, or, as was more frequently the case while walking, by leaning up against some object for support. He had no pain or trouble of any kind in the lower extremities. The pain was fairly well localized in the lower lumbar region and when very severe would radiate somewhat into the sides but never as far forward as the abdomen. The pain was intensely aching in character, and if he attempted to continue walking after its appearance it would develop into a painful, cramp-like feeling in the small of the back which would bring him to an abrupt standstill. After a short rest with support the pain and cramp would fade away entirely. At the time of his first visit to me he could walk about half a mile before the pain became severe. If he walked fast it came on more quickly. He had already undergone various treatments for chronic rheumatism, but without any amelioration of his symptoms, indeed they seemed to have grown worse instead of better.

Examination. November 1, 1910. He is a large, heavily built man, weighing 250 pounds stripped, there having been a steady increase in weight during the last fifteen years. The abdomen

is large and pendulous, so that in standing the shoulders are thrown backward and the spine is arched posteriorly in order to maintain the equilibrium, and evidently throwing a considerable strain on the lower portion of the erector spinæ group of muscles. The movements of the spinal column are perfectly flexible in all directions and cause no pain whatever. There is no trace of tenderness on direct pressure over the spine or over the muscles of the lumbar region. Jarring of the spine is equally negative.

The pupillary and tendon reflexes are normal. Indeed, except for a slight tremor of the hands and the mental and physical stigmata of chronic alcoholism, my neurological examination was negative.

The heart sounds were free from murmurs and the pulse was of moderate tension.

The femorals, popliteals, and pedal arteries were palpable. There was not, nor had there been, any swelling or edema of the feet or legs. The urine was free from albumin and sugar.

Remarks. From the symptoms presented by this patient, I think there can be little doubt but that we are dealing with the very characteristic condition of intermittent claudication manifesting itself in the lower portion of the sacrolumbar mass.

The man never experienced the slightest discomfort while in bed or when sitting. Walking or long-continued standing alone brought on the pain, which was deep-seated and very intense, and was always relieved by support of the spine, which removed the strain from the affected muscles.

The condition had persisted for two years, gradually growing worse in spite of treatment. The spine was perfectly mobile and the painful area was not tender on pressure.

This region receives its arterial blood supply through the lumbar arteries, which are four in number and arise at right angles to the abdominal aorta. Occasionally they take their origin from a common trunk, which subdivides into a right and left lumbar artery. The lumbar arteries then course between the psoas magnus muscle and the vertebral column to the interval between the transverse processes, where a division takes place into a dorsal and an abdominal branch, similar to the divisions of the intercostal arteries.

The dorsal branch gives off immediately after its origin a spinal branch, which enters the spinal canal and is distributed to the spinal cord; it then continues its course backward between the transverse processes and is distributed to the muscles and integument of the back, anastomosing with branches of the adjacent lumbar arteries.

The abdominal branch passes outward behind the quadratus lumborum and is continued between the abdominal muscles,

anastomosing with the epigastric and internal mammary arteries in part.

As the symptoms in the case are limited to the lumbosacral region, occasionally extending into the sides, I would attribute them to disease of one or more of the lumbar arteries or to an arteriosclerotic process in the abdominal aorta, which interferes with the free flow of blood through these vessels, so that a sufficient blood supply is received for the physiological processes in the passive state, but which does not suffice for the increased demands of the sacrolumbar mass during activity, hence the painful cramp and its peculiar intermittent character. I have found no cases recorded of intermittent claudication of the lumbar region, nor have I observed a similar case. It seems to me, however, not improbable that other cases of this same type may occur and have been overlooked or misinterpreted and that some of the lumbar pains and cramps of advanced life may be dependent upon arteriosclerotic processes in the abdominal aorta or its lumbar branches.


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