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Original Articles.

NEURALGIA OF THE BLADDER.

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In the light of the newer pathology of diseases of the genito-urinary apparatus, involving, as it does, mainly infection of the urinary way, the neuropathic element in vesical disease is quite likely to be forgotten. It is, however, a very important point for consideration, because of, 1, the relative importance of pain, *per se*, in diseases of the bladder; 2, the fact that in very many instances no lesions are discoverable which explain the pain; or, at least, such lesions as are found appear too trivial to explain the severity of the pain which the patient experiences; 3, the tendency to too radical treatment in the endeavor to relieve pain by compelling a cure of lesions which are so slight that topical applications are likely to do harm rather than good.

Picard¹ has divided cystalgia into the following classes:

1. Cystalgia, with lesions of the urinary apparatus, i. e., lesions affecting the urethra, bladder and kidneys.
2. Cystalgia, with lesions of neighboring organs, such as the prostate, rectum, and anus.
3. Cystalgia incidental to ataxia or general paralysis.
4. Cystalgia associated with such diathetic conditions as rheumatism and gout.
5. Essential cystalgia.

Broadly speaking, this is a very excellent classification. I would add to the second class diseases of the testis and spermatic cord. The author would especially call attention to the occurrence of neuralgia and severe spasm of the bladder in cases of renal tumor or stone. The association of vesical neuralgia of severe type with the passage of a small calculus through the ureter is well known. To the fourth class I would add lead poisoning and malarial infection. I have also found in several instances that neuralgia of the bladder was dependent on an inguinal hernia, the vesical symptoms disappearing immediately on recovery of the patient from a radical operation for hernia.

The term, neuralgia of the bladder, is logical in its application only where the pain is disproportionate to the extent of the lesion to which it is secondary. The location of the lesion has much to do with the severity of the subsequent pain; thus, lesions about the vesical neck are especially apt to produce severe vesical pain

and spasm; spasm being a symptom which is especially characteristic of neuropathic vesical disturbances.

In certain cases of vesical cancer, either primary or secondary, and especially in cases in which the vesical cancer is associated with malignant disease of the prostate, vesical pain and spasm are very severe. In cases, however, in which the malignant growth is located above the trigone, i. e., at a point removed from the vesical neck, a considerable degree of involvement of the bladder wall and the mucous membrane is possible without the occurrence of very acute pain.

ETIOLOGY OF CYSTALGIA ASSOCIATED WITH LESIONS OF THE URINARY WAY.

Sexual abuses of various kinds have been assigned by some authorities a very prominent place in the etiology of cystalgia. Repeated and prolonged practice of masturbation, coitus and prolonged sexual excitement without gratification have apparently been responsible for the occurrence of cystalgia in some instances. This is explained by the occurrence, first, of acute hyperemia with associated hyperesthesia of the nervous supply; second, the marked congestion, of a more or less passive type, succeeding the acute hyperemia.

Exaltation of the function of the sensory nerve supply to the bladder and adjacent parts, associated with increased blood pressure, constitute here a sufficient explanation of the symptoms. Prolonged retention of urine is very likely to be followed by cystalgia. A greater or less degree of traumatism of the vesical mucous membrane and muscular wall is the explanation in such cases. In young subjects neuralgia is liable to follow retention, while in older subjects atony is most likely to result.

Exposure to cold has been assigned as a cause of vesical neuralgia. As in case of other vesical diseases, the author is very skeptical regarding the etiologic influence of cold, *per se*. When, however, exposure to cold is associated with congestion or inflammation from any cause, and especially where a greater or less degree of infection of the vesical mucosa already exists, severe neuralgia is likely to result. Exposure to cold is of especial importance in the case of individuals suffering from the gouty or rheumatic diatheses, in whom very slight causes are often sufficient to cause vesical neuralgia. In most instances, however, where these diatheses exist, the resulting pain is of a distinctly rheumatic character, and susceptible to the same explanation and the same therapy as rheumatism of the muscular structures elsewhere.

Cystalgia may be caused by any disease of the anterior or posterior urethra. A urethral stricture, tumor, or chronic inflammation, may, any or all of them, enter into the etiology of cystalgia. A fissure of the vesical neck, a condition which is very exceptional, may produce

1. H. Picard, *Traité des mal. des voies urinaires*.

it. Urethral disease acts in three ways: 1, by extension of the inflammation by contiguity; 2, extension of the infection; 3, reflexly.

Hemorrhoidal disease, fistula and fissure occasionally produce neuralgia of the bladder. Hyperesthesia of the urethra, and perhaps of the glans, is very likely to be associated with vesical neuralgia, especially in sexual neurasthenics.

There is no question as to the association of disease of the kidney with cystalgia. A case is cited by Bouilly, in which a severe cystalgia was cured by the ablation of a renal cyst. Tuberculosis and malignant disease of the kidney are often associated with cystalgia. There are, of course, two elements to be taken into consideration here, to-wit: Reflex nervous irritation and direct irritation of the mucous membrane of the bladder by the products of the renal disease.

The occurrence of cystalgia as a consequence of disease of neighboring organs is easily explicable by the close association and intercommunication of the nervous and vascular supply of these parts. The abundant sympathetic nerve supply of the genito-urinary apparatus and its environs is worthy of serious consideration in this connection. Picard calls attention to the analogy of cystalgia from disease of neighboring organs to the gastralgia engendered by lesions of the intestine. The gastro-intestinal neuralgia produced by appendiceal disease is a very familiar phenomenon, and one which sometimes obscures the diagnosis.

In the early stages of diseases of the cerebrospinal axis, especially in locomotor ataxia, severe cystalgia may occur. Vesical pains are really frequent in what has been termed the pre-ataxic period of locomotor ataxia, and are associated with the shifting pains which occur here and there in that disease.

Cystalgia occasionally occurs in hysterical and chlor-anemic patients, and Lancereaux has claimed that in the class of individuals the French term *herpetiques* visceral neuralgias are frequent, this being especially true of the bladder.

Pain in the bladder in the gouty may either complicate or alternate with pain and swelling of the articulation of muscles. Cystalgia is particularly apt to occur if a gouty urethritis or prostatitis exists simultaneously with the general gouty symptoms. In rheumatism neuralgia of the bladder is occasioned by, and may be associated with, the retention of urine. It does not occur, as a rule, until the joint symptoms have begun to subside.

Neuralgia of the testicle is very likely to be associated with cystalgia, the pain radiating through the hypogastrium and back, spermatic cord and thighs. In rare instances individuals suddenly develop cystalgia in combination with frequent urination, on the one hand, or, on the other, more or less complete retention, without the slightest cause being discoverable. Hysterical retention is often associated with pain in the bladder.

SYMPTOMS OF NEURALGIA OF THE BLADDER.

Certain features of the symptomatology are obviously governed by the extent and character of the organic lesions present. The pain is of variable intensity, and may radiate through the hypogastrium, groins, thighs, perineum, rectum, back and testes. In some instances the pain is limited to the hypogastrium. There are associated with the pain, tenderness on hypogastric palpation and vesical tenesmus under the influence of even a small quantity of urine.

Pain is especially severe at the end of micturition, as might naturally be expected from the compression

of the hyperesthetic nerve supply of the bladder wall and mucosa as the bladder contracts. There may be considerable tenderness of the deep urethra on rectal palpation, or, in the case of the female, on vaginal palpation. Priapisms may occur to a greater or less extent. Frequent micturition is not unusual.

In the diagnosis, the surgeon should be guided largely by the character and severity of any primary pathologic condition that may be present, of an inflammatory or infectious character. He should also take into consideration the patient's neuropathic state in general, and the possible existence of diathetic conditions favoring neuralgias in general. In both children and adults, and especially in children, calculi, even of a very small size, may give rise to severe vesical pain and spasm. This may remain for a variable time after the original source of irritation has been removed.

General paralysis, and the early stages of spinal paralysis, are sometimes associated with neuralgia of the bladder. Thus, Verneuil cites a case of a physician in whom general paralysis was preceded, for a period of two years, by severe cystalgic crises.

TREATMENT.

The first indication, once the diagnosis is established, is obviously the cure of any organic condition which may be found. As already suggested, care should be taken not to treat too radically lesions of the urinary way, the mildness of which is out of all proportion to the severity of the neuralgic manifestations. In treating morbid conditions of the genito-urinary apparatus which are associated with a disproportionate amount of pain in the bladder, it is always safe to throw an anchor to windward and warn the patient that the neuralgia is likely to continue to a greater or less degree of severity and stubbornness for a greater or less period after the removal of the primary condition. The immediate indication is the relief of pain.

The narcotics, in general, are useful. The various preparations of opium, taken hypodermically, by suppository or clyster, are obviously the most important remedies. Aseptic solutions containing laudanum may be injected into the bladder and urethra where the mucous membrane is known to be free from lesions which might produce dangerous or even fatal absorption of the opium. The instillations of very weak solutions of eucain, cocain or menthol into the deep urethra and vesical neck are often of extreme service in emergencies of pain. Hot applications sprinkled with laudanum may be applied to the hypogastrium. An excellent means of equalizing the circulation and tranquilizing the nervous system of the bladder is the prolonged and frequently repeated hot sitz bath. Belladonna and stramonium, used by clyster or suppository, are exceedingly efficacious in the control of the vesical pain.

The general treatment is by far the most important, for immediate relief is always available by means of opiates. Sexual irregularities require attention; general nervous irritability should be controlled by sedatives, such as gelsemium, the bromids of potassium, sodium and camphor. Where the neuralgia depends on general debility or anemia, these conditions require the usual tonic and hemogenic measures. The gouty and rheumatic diatheses require treatment along the lines which are usually followed in the therapy of these conditions. Arsenic and strychnia are very valuable remedies in cases in which there is a gouty tendency to neuralgia in various situations. Arsenic is especially indicated in cases in which the malarial cachexia exists, and should be combined with quinin and iron.