

## Original Articles.

AN ENORMOUS FALSE ANEURISM IN THE LEFT FLANK COMMUNICATING WITH A TRUE ANEURISM OF THE ABDOMINAL AORTA.<sup>1</sup>

BY GEORGE B. SHATTUCK, M.D.,  
Visiting Physician Boston City Hospital.

THE interest of the case which I have to report lies in the question of diagnosis and in the pathological specimen to be shown subsequently.

The diagnosis lay between a vascular semi-fluid or gelatinous growth of a malignant character and an aneurism probably of the so-called false or diffused class. The opinions of those gentlemen who saw the case were pretty evenly divided between the two, and with some varied occasionally at different periods of the case. Fortunately the question of treatment was not involved, as there could be but one termination, and that a speedy one.

J. C., a currier, fifty-one years old, entered the City Hospital on February 2d. His general health had been fair, and he had continued work until eight weeks before entrance when he began to suffer from pain in the left lumbar region extending down the thigh to the leg and foot. I subsequently learned from him that he thought he had had varying pain in the back and especially in the left lumbar region nearly two years before. These pains had increased in severity. For two or three weeks he had been unable to lie in any position except upon the left side, and there was a commencing bed sore over the left trochanter. Four days before entrance the dispensary physicians, who had been summoned on account of the pains in the leg, called patient's attention to a large hard tumor between the ribs and the brim of pelvis, and advised removal to the hospital. When admitted the man was pale (almost cachectic), worn looking, and almost emaciated; there was no jaundice; the examination of the heart, lungs, and urine gave a negative result.

The tumor in the left side, according to my dictated notes in the record-book, "presented a hard mass, extending from the cartilages of the ribs above to beneath the crest of the ileum below, and from two inches to the left of the umbilicus in front to near the spinous processes of the vertebræ behind. It was immovable, rather tense, smooth on the surface, though not entirely regular in outline, and dull on percussion. A pulsation, which at entrance was but little marked, became in a day or two, with improved nutrition, very noticeable both to the eye and hand, especially at two points: one in front midway between spine of ileum and pubes and two inches above Poupart's ligament, the other at the back between the crest of ileum and lower border of ribs, four inches outside of the spine. Pulsation at each point being very marked as that of an aneurismal sac with thin walls. There was no thrill or bruit, but a slight murmur over the point referred to at the side. The pulse in the femoral and popliteal arteries was feeble. There were enlarged glands in the left groin above and below Poupart's ligament." There was no apparent ascites, and no abdominal tenderness except over the swelling.

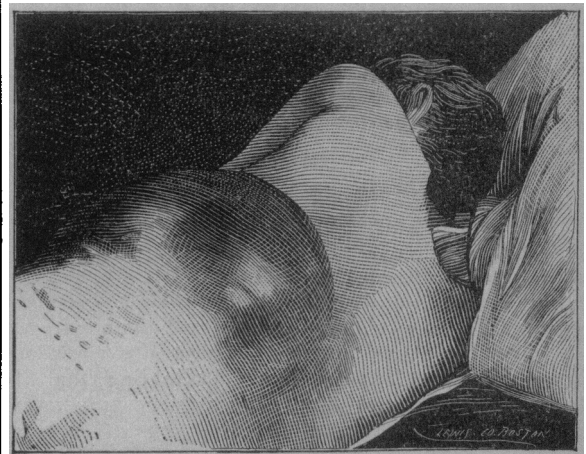
<sup>1</sup> Read at the Boston Society for Medical Improvement, March 23, 1885.

The tumor continued to increase in size and tension, the pulsation becoming more pronounced and more general, until it assumed the appearance of a good-sized watermelon lying across the left flank with an ill-defined sulcus at one part and a smooth, though not quite regular, surface; the end under the ribs being discolored and suggesting an impending slough.

February 15th I inserted a hypodermic syringe and obtained a dark bloody fluid mingled with pus. March 1st I used the aspirator; the needle being inserted one and one-quarter inches no fluid followed, but when pushed in two and one-half inches a dark-colored, quickly coagulating bloody fluid flowed through the tube, the last of which was of a brighter color. Four ounces were withdrawn, which, under the microscope, showed nothing but blood. The needle at no time gave the sense of being in a cavity.

The girth of the body across the umbilicus was frequently taken, but little value was attached to the measurements as indications of growth owing to the variable distention of the intestines by gas. February 25th, the tape showed thirty-four inches. March 5th, thirty-five and five-eighths inches.

March 9th, the photographs which I first passed round were taken, the other two being taken in the autopsy-room. The patient died on March 19th, six weeks and a half after admission, from exhaustion, having refused nourishment, and been delirious at times, for several days previously. The duration of the case was, therefore, seven weeks from the time the man's attention was first called to the tumor, three months from the time he gave up work, and nearly two years from the time he thought he first noticed pain in the back.



From Photograph taken March 9th.

The question of aneurism was entertained and that diagnosis was the first suggested. I could not, however, reconcile the history and conditions present with my experience or knowledge of aneurismal tumors. The previous history, the situation of the tumor, its apparent fixation beneath the ribs above and the ileum below, the want of any record of shock, the vagueness of previous and present symptoms except those referred to, pressure upon the lumbar nerves and their branches, the constriction across the growth, the absence of thrill

and bruit, the appearance of the patient, the absence of the sense of being in a cavity with the aspirating needle but rather in soft tissue, led me to regard with more favor, though without entire satisfaction, the diagnosis of semi-solid vascular malignant disease. A diagnosis which latterly became less tenable as the wall of the sac at its abdominal extremity became more tense and sharply defined, and the apparently enlarged glands beneath Poupart's ligament became softer. My colleague, Dr. Mason, through whose courtesy I retained charge of the case after my term of service ended, was wiser in adhering steadily to the opinion that the tumor was a sac of blood and probably a dissecting or a false aneurism.

I think such a case, viewed from the clinical standpoint, must be rare, and the books have but little to say on the subject. Stokes, in his classical treatise on the Heart and Aorta, gives by far the most satisfactory discussion of the phenomena which I have encountered, and reports one or two cases somewhat resembling this one.

Stokes, in his recapitulation of diagnostic points at the end of his chapter on "Aneurism of the abdominal aorta," lays down, among thirty-eight other propositions, the following:—

That the first development of a murmur low down in the abdomen should incline us against the diagnosis of aneurism.

That the abdominal tumors which most simulate aneurism are those whose consistence is semi-fluid.

That while the progress of an aneurismal tumor is generally from above downward, that of the solid tumor is more often from below upward. That the first appearance of pulsation, at some point low down in the belly, indicates that it is communicated to, rather than adherent in, the tumor.

It is hardly to be conceived that rupture of any other artery than the abdominal aorta could have produced a tumor of this character in this situation. To satisfy clinical record and the pathological conditions found to exist postmortem, we have then to suppose antemortem a true aneurism of the abdominal aorta situated just beneath the diaphragm in the immediate neighborhood of large nerves and nervous ganglia, attaining the size of a closed fist without much inconvenience or attracting attention, rupturing through a rent large enough to admit several fingers, without shock, and first making itself known by a swelling larger than an ostrich's egg in the left flank, which continues to grow for seven weeks at least without terminating the life of the patient, who finally dies from exhaustion after the tumor has attained the size of a large watermelon.

Autopsy, by Dr. W. W. Gannett, twelve hours after death, March 20, 1885.

Body of medium size, well developed, much emaciated. Marked lividity of dependent portions; rigor mortis present. Abdomen distended; the left half much more prominent than the right, with a soft, fluctuating area just posterior to the lateral line, above the crest of the ileum. Skin over this area dry and black. Right leg much enlarged; œdematous throughout. Diaphragm on both sides at fourth rib. Pericardium contained about ten cc. of clear fluid. Subpericardial fat considerably di-

minished in amount, of a gelatinous consistency, and of a pale saffron-yellow color. Heart of usual size. Left ventricle tolerably firmly contracted. Right ventricle and both auricles distended with partially coagulated blood. Aortic and pulmonic valves sufficient; mitral admitted tips of three, tricuspid tips of four, fingers. Valves and cavities not remarkable. Muscular substance pale in color. Inner surface, particularly the papillary portion, showed a variegated appearance, due to numerous opaque yellow spots on a pale red-brown. Pleural surfaces on both sides free from adhesion. Pleural cavities on both sides contained about ten cc. of clear fluid. Left lung retracted partly on removal of the sternum; they were of a gray color, inelastic, downy; numerous alveoli the size of a pin's head could be seen beneath the surface. Kidneys of usual size, pale, slightly yellow in color. Capsule detached with ease, leaving a smooth surface beneath. On section, ratio of cortex to medulla as usual. Glomeruli distinct as glistening points. Region of convoluted tubules and pyramids of a pale, saffron-yellow tint. Microscopically: glomeruli contained a little blood; tubules contained considerable pigment in the form of granules and discs. Bladder not remarkable.

On opening the peritoneal cavity the descending colon was found to be situated beneath the transverse colon, and extending diagonally across the abdominal cavity. The left half of the abdominal cavity was occupied by a large fluctuating mass, the upper wall of which was formed by a muscle, the fibres of which were nearly transverse. On incising this muscular wall, a cavity was disclosed, with irregular walls, filled in part with fluid blood, in part with laminated coagula, in part with soft, dark-red clots. The posterior wall was formed in part by the inner surface of the ileum, which was exposed in its upper portion and eroded; in part by the tissue lying immediately beneath the origin of the quadratus lumborum muscle. This large cavity communicated below through the femoral canal with a cavity in the upper part of the thigh, the size of the first, having a smooth wall, and coagulated blood for contents.

Just below the arch of the diaphragm the aorta was dilated so as to form a sac the size of a closed fist. The *posterior wall* was formed by the bodies of the last dorsal and first lumbar vertebræ, both of which were eroded about half their depth. From the anterior wall were given off the phrenics and the celiac axis. In the lower portion of the sac, just to the left of the vertebral column, was a *slit-like opening*, with smooth edges, large enough to admit four fingers; it communicated directly with the large sac of blood previously described.

The aorta showed throughout, in the intima, numerous opaque, yellow, elevated patches. The œsophagus, stomach, and intestines showed nothing remarkable. Liver of usual size, pale yellow in color, opaque, and doughy.

#### DIAGNOSIS.

Fatty degeneration of muscular substance of heart. Vesicular emphysema of lungs. Blood pigment in the tubules of the kidneys. Aneurism of the abdominal aorta, rupture behind the peritonæum and

transversalis muscles, with the formation of a large false aneurism, occupying the whole lumbar region on the left side, and extending into the groin. Erosion of the vertebræ.

### THE CONSTRICTOR URETHRÆ MUSCLE.— ITS RELATIONS TO URETHRAL PATHOL- OGY AND TREATMENT.

BY A. T. CABOT, A.M., M.D.

BETWEEN the anterior and posterior layers of the deep perineal fascia, better known as the triangular ligament, lies the membranous portion of the urethra surrounded by the constrictor or compressor urethræ muscle.

This muscle occupies the greater part of the space between the two layers of the fascia. Its fibres, arising from the ischio-pubic rami and the tendinous parts about, run transversely across the sub-pubic arch, separating to go above and below the urethra. Besides these transverse fibres, there are others that run obliquely across the same space, and others still that encircle the canal.

Thus the membranous urethra is embedded in a muscle which, by its contraction, forces together the walls and closes the calibre of the tube. This constrictor is also known as the external or urethral sphincter and as the cut-off muscle. It is to a great extent under the control of the will and acts as the voluntary sphincter of the bladder. A brief review of the mechanism of micturition will help us to understand its functions.

As the bladder fills with urine a point is finally reached at which the internal pressure is great enough to overcome the strength of the band of elastic and involuntary muscular fibres about the urethral orifice (internal sphincter) and the urine forces its way into the prostatic urethra where its presence causes the sensation which is recognized as a "call to urinate"; its further escape is then only prevented by the contraction of the constrictor muscle.

If now no opportunity offers for micturition the compression and closure of the urethra is made more thorough by a conscious effort of this muscle, and, at the same time, the prostate closes down, pressing the urine back into the bladder, and the inclination to urinate passes away. Later, however, the urine, accumulating in still greater quantity, again enters the prostatic urethra, and, if urination is now desirable, the constrictor relaxes and the bladder empties itself.

Physiological micturition is thus easily accomplished. When, however, these parts concerned in the act are altered by disease, normal urination may be variously interfered with. An inflammation affecting the prostatic urethra renders it extremely sensitive, so that the presence in it of a few drops of urine brings on an almost irresistible desire for micturition; hence the frequency of the act which is so marked a symptom in disease of the neck of the bladder.

When the inflammation reaches to the parts about the constrictor it causes a more or less irritable condition and spasmodic contraction of this muscle. A parallel to which condition is found in the action of the sphincter ani when the parts about it are

ulcerated or inflamed. The obstruction to the passage of an instrument which is usually met with at the membranous urethra in cases of chronic prostatitis is caused by, and is evidence of, this action of the urethral sphincter. A spasmodic stricture of this sort is also the not uncommon accompaniment of an inflammation affecting the bulbous portion of the urethra just anterior to the constrictor.

Now the contraction of this sphincter divides the urethra into two parts, an anterior portion, extending down to the triangular ligament, and a deep part, the prostatic portion. Indeed, the muscle in its ordinary state of tonicity makes this division, but the separation of the two parts of the canal is much more complete when it is in a state of increased contraction. And this is not a matter of interest to the anatomist alone, but, on the contrary, it is especially of importance to the surgeon, for the position and action of this sphincter exercise an important influence upon the pathological processes occurring in the canal on either side of it.

If the anterior portion of the urethra is the seat of inflammation, the contraction of the muscle protects the deeper parts and hinders the passage of discharges and the extension of the inflammatory process backward to the prostate and bladder.

When, on the other hand, the inflammation is posterior to it, the constrictor acts as a dam, and by preventing the ready escape of pus outward and by offering an obstruction to the passage of the urine, it tends to aggravate the morbid process behind it just as an anterior stricture prolongs and intensifies inflammation of the deeper parts.

From a consideration of these facts it will be apparent that when a urethritis exists in front of the constrictor muscle the passage of an instrument through it should be avoided if possible, in order that the discharges, especially when of gonorrhœal character, may not be conveyed on toward the bladder. If in such a case the use of a catheter becomes necessary a preliminary irrigation of the canal may, by removing the discharges, lessen the chance of infection of the parts behind the sphincter.

In the other class of cases, when the inflammation is posterior to the urethral constrictor and is, as has been said, aggravated by the obstructive spasm of this muscle, the passage of sounds, and dilatation of it, is a most important part of the treatment; and the acknowledged value of sounds in cases of inflammation about the neck of the bladder is largely due to the stretching of this muscle effected by them.

Occasionally, in these cases, the spasm of the constrictor and the consequent obstruction to the passage of the urine is so great that while the bladder is laboring to relieve itself of its contents the pressure in the sensitive prostate becomes so excessive as to cause a pain that is scarcely to be endured. The patient strains and assists the bladder with all the abdominal pressure he can muster; until finally a few drops trickle through and the spasm slowly relaxes.

This condition of things is well illustrated in the following cases:—

CASE I. C. D., a young man of thirty-two, with chronic prostatitis of gonorrhœal origin, was suffering at the time