Manton (W. P.)

Sudden Emptying of the Bladder AS A CAUSE OF CYSTORRHAGIA.

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*SUDDEN EMPTYING OF THE BLADDER AS A CAUSE OF CYSTORRHAGIA.**

BY WALTER P. MANTON, M. D., DETROIT.†

THE very rare occurrence of hemorrhage from sudden withdrawal of the urine from an over-distended bladder, prompts me to offer the following notes of a case which has recently come under observation.

Among the conditions which lead to functional disturbance of the bladder, diseases of the brain and spinal cord, and hysteria in particular, play the chief rôle.

Receiving its nervous supply from the mesenteric ganglia of the sympathetic, and also from the lumbar portion of the spinal cord, the bladder is particularly liable to respond to influences affecting the sympathetic and the cerebro-spinal systems—and every one who has had much to do with the local diseases of women, knows how trying such cases often are, and how the utmost skill of the physician is frequently taxed to overcome these derangements of function, which, although perhaps innocent in themselves, may cause the patient much distress, and possibly lead to more serious complications.

One of the least frequently observed of these functional phenomena connected with the bladder is, retention of urine with extreme distention of the viscus. In

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its normal condition the bladder capacity is about a pint, —and when moderately distended it measures, accord- to Huschke, five inches in length by three in breadth. The experiments of Budge, however,—referred to by Skene—indicate that the dilatability of the organ is very great, and that distention takes place in the living sub- ject to a far greater extent than can be artificially pro- duced after death. Skene mentions a case, which he saw, in which the bladder reached about two inches above the umbilicus. A similar case came under my notice while intern in Winckle's clinic. The fundus of the bladder stood three fingers above the umbilicus, and 3,180 grammes—a little over six pounds—of urine were removed by the catheter. Another case seen with my friend Dr. Paul Grenser, of Dresden, displayed quite the same amount of distention. The patient was an old woman—the bladder sacculated, and the urine highly ammoniacal. Lieven drew 4,000 grammes (about 128 ounces) of clear transparent urine from the bladder of a woman 33 years of age, in whom the bladder stood as high as the uterus at six months, and had been mistaken for an ovarian tumor. Schatz removed 9 pounds of urine from one patient, and Hofmeier 4½ quarts from another.*

I have referred to the above cases as interesting in connection with the following notes, which form the sub- ject of my paper.

In October of this year, I was requested by Dr. C. B. Burr, Superintendent of the Eastern Asylum, to see a

*Die Krankheiten der Weiblichen Harnröhre und Blase, von Prof. Dr. F. Winckel, Stuttgart, 1877, p. 213.

case which presented this history. The patient, a middle aged woman, had been entered in the asylum for melancholia. She was in poor health physically,† and shortly after admission began to suffer from morning sickness and vomiting. Occasionally the vomiting would appear at other periods of the day. About ten days before I saw the patient, an abdominal swelling, which extended nearly to the umbilicus, and was hard on pressure and dull on percussion, was discovered. As the patient was obstinately constipated, an ordinary enema of water was given. The dejection that followed was copious, and the vessel contained, besides the fæces, a quantity of blood with several clots. When the woman was put to bed again, it was noticed that the abdominal tumor had disappeared, and as she still continued to "flood," it was thought that an abortion might have taken place. The flowing continued for several days, and there were numbers of clots, apparently from the vagina, found on the napkin. Pain and tenderness in the vesical region, and the discharge, at this time, of a copper colored highly offensive urine, indicated bladder complication,—and this organ was daily washed out with a warm antiseptic lotion.

At the time of my visit the patient was in a feeble state, but there was no apparent cause for the condition save a general flagging of vitality. The abdomen, especially in the bladder region, was quite sensitive to pressure, and there was a terrible stench from the bladder discharge in spite of the utmost cleanliness and the

† At the time of her admission it was thought by her friends that she would not long survive.

use of antiseptics. I could detect no swelling, although the skin of the abdomen had the appearance of that of a newly-delivered woman. The uterus was not enlarged; the cervix was hard and slightly lacerated, but the os was not dilated. The bladder was hard and corrugated. The only abnormal condition found, aside from the bladder-thickening, was a small firm nodule, behind, and apparently attached to, the uterus.

On account of the exceedingly offensive discharge from the bladder, and to explore its cavity to determine the presence or not of fungous growths, I next day dilated the urethra.

Neither new growth, dilated veins (hæmorrhoids), or ulcerations were found; and the vesical mucosa, as determined by the endoscope, was of a pale gray color.

The patient reacted well from the anæsthetic, and for a time seemed somewhat improved by the operation, but she finally sank, and died three days later, apparently from exhaustion. The treatment of the case consisted principally in washing out the bladder with antiseptic lotions, and sustaining the patient with the most nourishing and easily assimilated foods.

A most thorough and careful autopsy, conducted by Prof. F. W. Brown, Pathologist to the Asylum, failed to reveal any morbid changes in the abdominal viscera except in the bladder walls. The mucous membrane of the viscus was of a dirty gray color, and the entire wall was enormously thickened—in places as much as one-half inch. There was no indication of hæmorrhage, either on the surface of the membrane or into the substance of the walls.

That the female bladder is capable of somewhat greater distension than that of the male, is well known; and I am inclined to think, could we get at the statistics of the subject, cystorrhagia from all sources would be found to be more frequent in the former than in the latter. Through the kindness of Dr. E. A. Christian, Assistant Superintendent of the Eastern Asylum, I am permitted to refer to the case of a male patient who was under his care.

This patient had been ailing for sometime. One day the doctors attention was attracted by the peculiar appearance of the abdomen, which on examination proved to be due to the distended bladder, which reached the umbilicus. The catheter was passed and between two and three quarts of urine removed. Following this, the patient suffered a good deal for several hours. On the following day the catheter was again passed, and about a quart of dark coffee-ground colored urine withdrawn. This color remained after filtering the urine, showing that the blood was thoroughly disintegrated and its coloring matter set free.

At the visit next morning, the patient seemed to be doing well,—but five minutes after the doctor had seen him, he expired suddenly.

At the autopsy the bladder walls were found to be thickened from one-fourth to one-half inch,—and the mucous surface was covered by a layer of blood; and throughout the mucosa were punctiform hæmorrhages. Both ureters were considerably dilated. The kidneys were sacculated, and undergoing cystic degeneration of the cortical substance. The left renal pelvis also con-

tained a quantity of pus (pyelitis). The cause of the retention of urine was found in the prostate gland,—the middle lobe of which was enlarged to the size of a walnut, and acted in the urethra as a ball-valve, preventing the escape of urine. So completely did this plug stop the lumen of the urethra, that even after removal of the bladder from the cadaver, the viscus still contained a considerable quantity of urine.

If we look for an explanation of the hæmorrhage in these two cases, I think it will not be difficult to find one. The bladder is exceedingly well supplied with blood-vessels from the superior, middle, and inferior vesical branches of the internal iliac, and from branches of the uterine artery. These ramify all over the viscus, but are more largely developed at the base and neck. (See Savage's "Female Pelvic Organs," English edition; also Hart's "Atlas Female Pelvic Anatomy," Plate XIV.) The veins are also numerous, large, and interlace freely, forming a thick plexus over the neck, base, and sides of the organ.

The color of the mucous membrane of the contracted bladder is a rosy ash; as the folds are distended by the accumulating urine the color becomes still brighter, because as the plicæ expand the blood vessels are brought more and more into prominence. But, as in the cases just cited, it is probable that beyond a certain point of distention, the urine, pressing upon the vesicle and neighboring blood vessels, gradually shuts off a portion of the blood supply. As long as this state of affairs exists, hæmorrhage is not likely to take place unless preceded by rupture of the viscus; but, supposing the whole

or a greater part of the urine in the bladder to be quickly withdrawn, the pressure is relieved, the blood-ways suddenly becoming flushed dilate, and their weakened walls —due, perhaps, to disease as well as pressure—unable to stand the *vis-a-tergo* force, rupture and pour out their contents into the bladder cavity. If now the bladder has not reached that state of atony denominated paralysis, there is a speedy contraction of the muscular layers of the organ and the hæmorrhage is checked. Should, however, the contraction be absent or incomplete, the bleeding must continue to a greater or less extent, and ultimately lead to a fatal result. We have a somewhat analagous condition in the so-called paralysis of the puerperal uterus, the result of over distention. Here the hæmorrhage is generally frightful, because the uterine atony prevents contraction and the resulting closure of the vessel-mouths.

The cases which I have thus briefly reported are not only interesting on account of their rarity, but instructive, teaching us that:

1. Over distention of the bladder may result in tissue or other changes which predispose to hæmorrhage.

2. Sudden emptying of the distended viscus may precipitate rupture of the vessels, and ultimately result in death.

3. The urine should be withdrawn at intervals in small amounts, in order that the bladder may accommodate itself to the new conditions.

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