RUPTURE OF THE RECTUM BY PETERSEN'S COLPEURYNTER DURING AN ATTEMPT TO PERFORM INTRA-PERPITONEAL CYSTOTOMY.

By GEO. RYERSON FOWLER, M.D.,
OF BROOKLYN, N. Y.,

SURGEON TO THE METHODIST EPISCOPAL HOSPITAL, AND TO ST. MARY'S HOSPITAL.

ON MARCH 12, 1889, D. C. R., æt. 63 years, was admitted to my service at the Methodist Episcopal Hospital, with the following history: For six years he had suffered from vesical irritability and dysuria, with occasional attacks of retention of urine. Four months previous to admission a rubber catheter had been broken off in the urethra, the fragments being subsequently removed through an incision at the peno-scrotal junction.

Examination per rectum revealed a considerable enlargement of the prostate body, both in the middle and lateral lobes. A Thompson’s searcher introduced into the bladder came in contact with calcareous material seemingly imbedded in the region of the left lateral lobe of the prostate.

On March 16, an attempt was made to perform intra-peritoneal cystotomy after the manner of Rydiger. The rectal bag or colpeurynter of Petersen was introduced into the rectum and 8 oz. of water, by actual measure, injected therein. A similar quantity of saturated solution of boric acid was then thrown into the bladder, after thoroughly washing out this viscus with the same solution, the penis being tied with a piece of rubber to prevent the escape of the solution from the bladder.

An incision four inches long was made in the median line about half way between the umbilicus and the pubic symphisis, and the parietal layer of the peritoneum reached. As the latter was identified, a black mass was seen through its transparent structure occupying the abdominal cavity. Upon opening the peritoneum this was found to

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be the rubber colpeurynter introduced into the rectum. It was at once evident that the rectal wall had given way and the bag had found its way into the abdominal cavity. It was observed that the patient, just prior to the opening of the peritoneal cavity, had exhibited signs of profound shock, this probably corresponding to the moment when the rectum gave way and the colpeurynter entered the abdominal cavity.

The rubber bag was drawn into the incision sufficiently to cleanse its exterior, and was then partially emptied by turning the stop-cock attached to the rubber tubing which projected from the anus. The fluid was carefully gathered as it escaped, and, together with what was removed from the bag upon its withdrawal, was measured and found to amount, in all, to eight ounces. Upon withdrawing the bag, it was found that a rent fully four inches in length had been made in the anterior wall of the rectum, the upper limit of which reached to the sigmoid flexure.

The abdominal cavity was thoroughly cleansed with boiled distilled water, and an attempt made to close the rent in the rectal wall. Upon emptying the bladder in order to accomplish this, it was found impossible to adjust accurately the lower margins of the rent by means of the Lembert suture. Under these circumstances, the condition of the patient becoming exceedingly unfavorable for future interference, the operation upon the bladder was abandoned and an artificial anus established by bringing the edges of the tear in the rectal wall up to the lower angle of the incision and there securing them. In accomplishing this the real cause of the rupture was found to consist in a well-marked thinning and softening of the structures of the rectum itself. It was only after many trials and the greatest care in the manipulation that the artificial anus was established, the tissues of the rectal wall giving way again and again and the silk thread tearing out under the comparatively slight tension required to hold this portion of the rectum in position.

The patient survived the operation but a few hours, never having rallied from the shock following the occurrence of the accident. A post-mortem examination revealed the condition as above described, the softened, thinned, and otherwise weakened rectal wall being especially well marked.

The points of interest in connection with this case are as follows:
Rupture of Rectum

1. The fact that the quantity of water used to distend the rectal colpeurynter was rather below than above the average employed by surgeons. In fact, two ounces less than the minimum quantity mentioned by leading writers as necessary to attain the object of the distension was employed in this case.

Cadge, in the course of a discussion on supra-pubic lithotomy before the Royal Med. and Chir. Soc., at the meeting of March 30, 1886, relates a case in which he introduced 18 ounces of fluid in the rectal bag, for the purposes of a supra-pubic lithotomy. When the bag was removed from the rectum a teaspoonful of blood followed, and then Cadge's suspicions were aroused. The patient went on very well for the first few days, when symptoms of suppression of urine arose. The patient died and at the autopsy it was found that a rupture of the upper part of the rectum, between it and the bladder wall, had taken place. Advanced renal disease was also present.

M. Nicaise, at a meeting of the Soc. de Chir., Paris, October 3, 1888, relates the following case: Patient, æt. 65 years, admitted for vesical calculus, which had produced chronic lesions of the urinary apparatus. Several lithotrites had been performed without relief, supra-pubic lithotomy was decided upon. Operation apparently successful for first 8 days, when vague and indefinite symptoms occurred. Death took place on the 15th day following the operation, without any evidence of peritonitis or other complication to account for the lethal exit. At the autopsy a rupture of the anterior wall of the rectum was found. This did not extend into the peritoneal cavity or bladder. There was considerable induration of the recto-vesical region corresponding to the site of the rupture. The rectal bag had been filled with 10½ ounces of water and the bladder had been distended with 8½ ounces of fluid.

2. The condition of the rectal wall is worthy of attention. There can be no question concerning the resistance to rupture which the rectal wall offers under normal conditions. But the

altered conditions incident to senility, combined with the degenerative change which the surrounding parts are known to undergo in chronic vesical disease, are precisely of a character to favor the occurrence of the accident under consideration. In the case herewith reported this was strikingly illustrated by the circumstances attending the rupture and the state in which the rectal wall was found, both at the operation and the autopsy.¹

It may likewise be suggested that the particular operative procedure attempted, namely, intra-peritoneal cystomy, may have contributed to the occurrence of the accident; the support which the rectal walls receive from intra-abdominal pressure being lessened by the incision in the walls of the abdomen.

There are only two recorded instances of rupture of the rectum, prior to my own, occurring during an attempt to perform supra-pubic opening of the bladder. There are several references made to other cases, but these cannot be authenticated. Prof. Keyes, of New York,² quotes the case of Nicaise and then remarks that 4 or 5 other instances of this accident have occurred in France. It has been impossible to find any other reference to these cases except in the course of some remarks by M. Th. Anger, in the discussion upon M. Nicaise’s paper, above referred to, and which is reported in connection with the latter. Mr. Anger says: “The case of M. Nicaise is the 4th or 5th of the same kind; I have therefore rejected the use of Petersen’s balloon.” A most thorough and extended search in the library of the Surgeon-General’s office, including the proof-sheets of the forthcoming number of the Index Catalogue (Vol. XI.), having proved fruitless, I am forced to conclude that either M. Anger has not been properly reported, or else the cases which he referred to had come to his knowledge through channels other than the ordinary ones of information through publication.

¹M. Le Dentu, in the discussion of Nicaise’s paper advances the opinion that alterations in the rectum by disease are the cause of the rupture.

²Annual of Universal Medical Sciences, 1888, Section C., p. 27, Article, “Genito-Urinary Surgical Diseases.”
The same kind of hearsay evidence seems to have been accepted by no less an authority than Sir Henry Thompson. In the article, "On the Supra-pubic Operation for Opening the Bladder," he makes use of the following language:

"First, in regard to the rectal distending bag. It has hitherto been made of a spheroidal or pyriform outline, and some operators, it is said, have, in emptying it, burst or seriously injured the rectum."

A further detail of facts in these cases, such, for instance, as those relating to the amount of fluid employed in distending the rectal bag, together with the condition of the rectal wall, would have been of incalculable importance in clearing up the question as to the dangers to be apprehended in the employment of this device. Two facts are undeniable: First, the advantages which the supra-pubic route to the bladder affords in certain cases, and second, the almost indispensable assistance afforded by the rectal bag in overcoming the principal difficulties and dangers of the operation.