Corps, Oct. 31st, 1863, whence he was discharged the service September 14th, 1864, and pensioned.

The hand and fingers continued to be very sensitive to cold and heat, and at times intensely painful.

One morning in the fall of 1865, he found the power of supporting the head was lost to such an extent that he was unable to rise from his bed, and clonic contractions, drawing the head to the right shoulder, lasted four days, but did not recur. Late in December, 1869, the pain at the point of lodgement of the missile began to increase, and, January 31st, 1870, Professor N. S. Lincoln, having placed the patient under the influence of chloroform, cut down and removed the ball, which was found thrust in between the subclavian and a branch of the brachial plexus, the ball resting on the artery just where it emerges from beneath the clavicle, with the nerve drawn tightly across the missile in front. On pushing aside this nerve, vigorous shaking of the limb was produced. The wound healed readily; the limb, which had become somewhat atrophied, is now equal to its fellow in size and strength, and with the exception of a very slight sensitiveness of the fingers to cold and heat, which is gradually improving, the patient is entirely relieved of his suffering.

Washington, D. C., July 6th, 1872.

CASE OF VESICO-VAGINAL FISTULA, INVOLVING THE URETHRA, WITH SUCCESSFUL OPERATION.

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Read at a Meeting of the Hampshire County Medical Society, Oct. 9th, 1872.

THE patient, Mrs. P. K., æt. 35, then living in Ireland, was delivered of her sixth child in November, 1866, after a protracted labor of forty-eight hours' duration, during which she was attended by a midwife.

She states that, immediately afterwards, the urine failed to pass by the urethra, but came away with the lochia. She called a physician, who recognized her condition, and sent her to a hospital, three weeks after her confinement. There she submitted to an operation, silk sutures being used. The operation proved unsuccessful, and was not repeated.

The patient's general health has been unimpaired, and she has given birth to two children during the six years which have elapsed since the establishment of the fis-

tula, both confinements being unattended by any difficulty.

The constant dribbling of urine and saturation of underclothing, together with the consequent irritation of the labia and thighs, has been a source of annoyance and mortification to her, and led her at last to consult me for relief. Upon examination, I found a fistulous opening at the base of the bladder, situated at the junction of the bladder and urethra, and involving the latter, extending an inch or more in an exactly transverse direction, three quarters of an inch in width, and thus oval in form. Of its borders, the posterior was smooth, regular and rounded, and formed of the thickened vesico-vaginal septum; the anterior was quite irregular, and was made up, in its middle third, by the thin and flattened inner extremity of the urethra; in each of its outer thirds by a thin and somewhat irregular line of vesico-vaginal tissue, lying upon a lower plane than that of the posterior border, and of the adjacent urethra. The fibres of the sphincter vesicæ seemed to have been destroyed in great measure. The vesico-vaginal wall was much thickened and indurated, and the anterior lip of the cervix uteri was prolonged down upon and blended with it to within an inch of the posterior border of the fistula. A probe was readily passed through the urethra, showing its permeability.

Here, then, it was evident, was a condition of the parts for the relief of which the usual operation of denuding and approximating the edges of the fistula was inappropriate and would have proved inadequate; for, even had I been successful in the attempt to unite the thin and irregular anterior edge, made up, in part, of the still thinner inferior wall of the urethra, to the thicker posterior edge, not only would the line of union have been a weak one, but the requisite traction upon the inferior wall of the urethra would have rendered it a funnel-shaped canal, through which the urine would have found ready and constant exit.

Influenced by this consideration, and guided by the valuable suggestions of Dr. Emmet, of New York, whom I consulted in reference to the case, I decided not to denude the edges of the fistula, but to remove a continuous strip of the vaginal mucous membrane, one third of an inch wide, *around*, and a quarter of an inch *back from* the edges of the fistula. Such a line of denudation would cross over the urethra transversely, and about a quarter of an inch in front of its inner extremity. When the

opposite surfaces of vaginal tissue thus denuded should be approximated and united, and the open mouth of the urethra *turned into the bladder*, two important results were hoped for: *first*, a broad and firm line of union of the opposed surfaces; *second*, both from the necessary traction upon the inferior wall of the urethra and its consequent approximation to the superior wall, and, also, from the probable bending upon itself of the free inner extremity of the urethra, the establishment of a sort of valve which should in some measure fulfil the office of the missing sphincter; and such a valve would be likely to be increased in efficiency as the bladder filled and the urethra pressed more firmly against the posterior surface of the symphysis pubis. The accompanying wood-cut well illustrates the peculiarities of the case and mode of operation.

After brief preliminary treatment, the operation was performed on the 27th of April, 1872, Drs. Dunlap, Thompson and Tyler, of this town, present and assisting.

The patient was etherized and placed in Sims's position and Sims's speculum introduced. With the curved scissors, a nearly continuous strip of the vaginal mucous membrane, one-third of an inch wide, was then

removed, entirely around the fistula and well out to an angle beyond each extremity.

The line of denudation, when completed, measured about two inches in length on each side of the fistula. Ten silver wire sutures were then passed under the denuded borders of the fistula, and the parts carefully approximated by twisting the ends of the sutures. Considerable difficulty was experienced in passing the sutures accurately through the delicate tissue overlying and adjoining the urethra; two or three of the sutures were passed through the hypertrophied anterior lip of the cervix before alluded to.

On the completion of the operation, apposition was found complete, and no oozing of urine could be detected in the line of the fistula.

The after-treatment consisted of confinement to bed, and to the recumbent position; two or three grains of opium daily, to keep the bowels confined and to insure sleep at night; the retention of Sims's sigmoid catheter—removed and cleansed twice a day; and, after the second day, fluid and nourishing diet, such as beef-tea, chicken broth and the like. The vagina was also washed out by a tepid water injection each day. The progress of the case was quite satisfactory; hardly any febrile reaction occurred; no vesical spasm interfered with the retention of the catheter; and the urine was wholly discharged through the instrument. On the eleventh day after the operation, the sutures were removed and union found to be complete; no leakage could be discovered at any point of the line of union. The catheter was retained three or four days longer to insure more perfect union, and during this time the bowels were relieved by enemata and castor oil.

On the fifteenth day, the catheter was removed, and the retentive and expulsive power of the bladder put to the test. To my gratification, the urine was retained for three hours, and then passed completely and without difficulty.

Since then, improvement in vesical power has been constant; at the present date, the urine is passed only three or four times daily, and the patient is not obliged to rise at night for that purpose, as she was obliged to do the first two or three weeks.

The case seems to me one of special interest, from the peculiarity of the local condition, and the mode of treating it, and from the ready resumption of its functions by an organ so long disused.