A RADICAL OPERATION FOR THE CURE OF CANCER OF THE PENIS

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In an accompanying article Dr. Lloyd G. Lewis has presented an excellent study of the cases of cancer of the penis which have been operated on by a radical procedure that I devised and employed in 1907, but did not report until 1926 (1). We have recently modified this technique so as to make it more radical and yet still to conserve the root of the penis and the sexual powers. We wish herewith to present in detail the operation which we are now employing in these cases. At the time at which I first developed this operation, it was frequently thought necessary in order to carry out a radical procedure for carcinoma of the penis to perform complete emasculation, and after removing the scrotum and its contents and the crura of the corpora cavernosa, as well as the shaft of the penis, to bring the urethra out through the perineum. Clinical studies, dissection of autopsies and a review of the lymphatic drainage of this region convinced me that total emasculation was entirely unnecessary and unwise, because of the fact that the lymphatic drainage is almost entirely into the glands of the groin, and practically never into the scrotal or perineal regions.

The new procedure which I proposed, commenced with an extensive block dissection of the fat surrounding the glands of the groin, the pubic region, the upper portion of the thigh and fatty prolongations into the upper portion of the scrotum. The dissection was continued downward so as to include the lymphatics and surrounding structures along the base and root of the penis in continuity with the portion of the penis amputated for removal of the growth. It was found possible thus to carry out a very

radical procedure, and yet preserve a portion of the corpora cavernosa, and a little more of the urethra, so as to give a spout-like projection which would afford satisfactory micturition without soiling the scrotal skin. To our surprise it was discovered that these patients were able to have erections, which varied in extent, according to the operation, but were in many cases sufficiently lengthy to make it possible for the patient to have intercourse

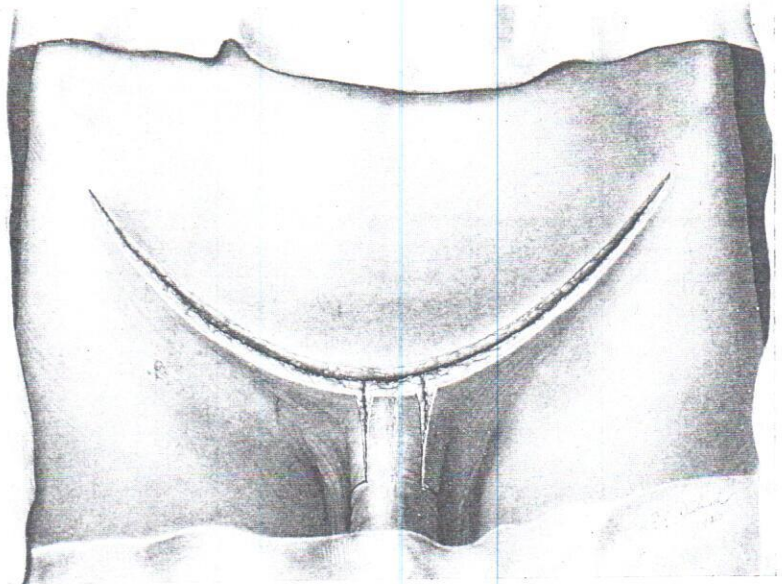

FIG. 1. YOUNG'S RADICAL OPERATION FOR CANCER OF THE PENIS AND GLANDS OF THE GROIN

Showing the curved incision in groins, parallel incisions down shaft of penis, semi-circular incision around posterior and lateral aspects of shaft of penis.

and quite satisfactory ejaculations. This is brought about very clearly in Lewis' very comprehensive clinical study of the cases in which this operation has been carried out. In his report it has been gratifying to find that he has discovered no local recurrences either in the urethra, corpora cavernosa, or the region of the penile or scrotal wounds. He has demonstrated conclusively that the operation is truly radical. His studies have confirmed our assertions that removal of the scrotum and its contents, and

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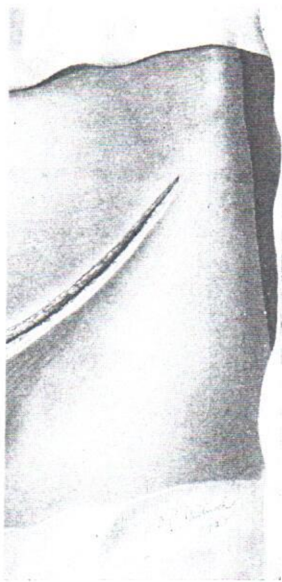

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also extensive removal of the corpora cavernosa are generally quite unnecessary. The excellent results which have been obtained are, I believe, very considerably due to the removal in continuity of the entire lymphatic drainage from the penile carcinoma to the upper limits of the groin on each side. The recent modification which we have employed to make the procedure a little more radical includes the removal of Buck's fascia,

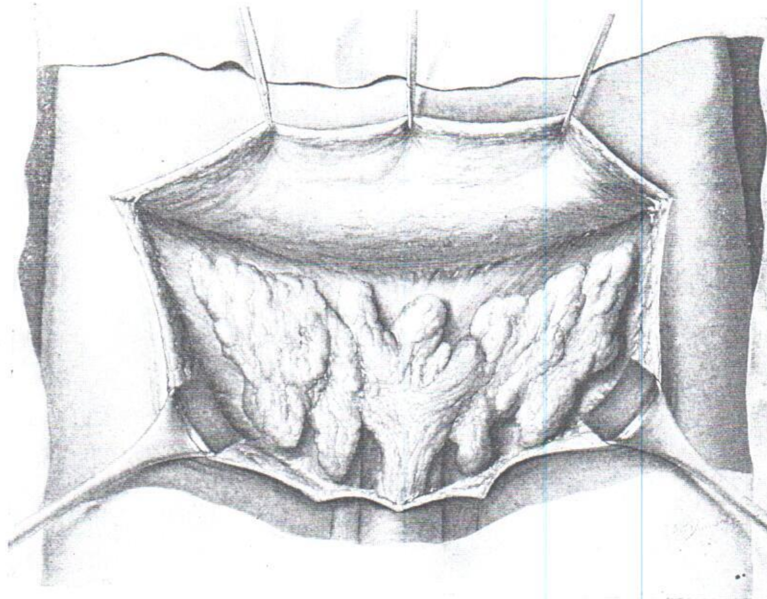

FIG. 2. YOUNG'S RADICAL OPERATION FOR CANCER OF THE PENIS AND GLANDS OF THE GROIN. SKIN FLAPS DISSECTED FREE FROM FAT OF GROINS, PUBIC REGIONS WITH EXTENSION DOWN THE ROOT OF THE PENIS SHOWN

which surrounds the corpora cavernosa and urethra, to the very root of the penis. This addition to the technique makes the operation even more radical than before, and insures the complete removal of the dorsal lymphatics, as will be shown in the accompanying drawings. As at present carried out, the operation is as follows:

The region of the tumor is very carefully covered with a tightly fitting, antiseptic dressing, after which the region of the operation

is thoroughly disinfected. This sterilizing process is very important as the carcinomatous lesion is usually markedly infected, a condition which is probably responsible for the fairly frequent postoperative suppurations which are encountered. Having very thoroughly cleansed the shaft of the penis, scrotum and groin, a semilunar incision is made from a point near the anterior-superior spine on one side to the other, as shown in figure 1. The

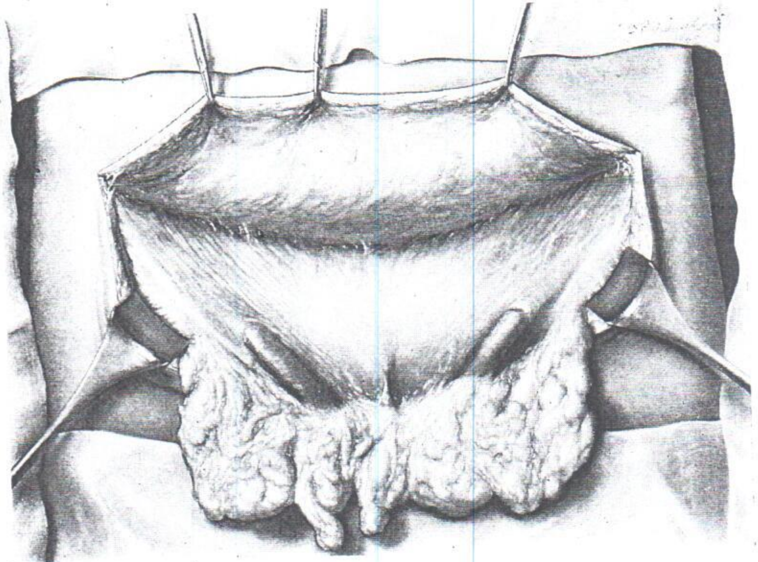

FIG. 3. YOUNG'S RADICAL OPERATION FOR CANCER OF THE PENIS AND GLANDS OF THE GROIN. DISSECTION OF UPPER PORTION OF GROINS AND SUPRAPUBIC REGION COMPLETED, EXPOSING SPERMATIC CORDS

lower part of this incision is just above the base of the penis, and goes through skin and fat. From the most dependent portion of this incision two parallel longitudinal incisions are made about 2 cm. apart, one on each side of the shaft of the penis down to the point where amputation is to be carried out. A circular incision is then made around the inferior surface of the penis from one of these longitudinal incisions to the other, but the skin across the dorsum is not divided by the circular incision. The incisions along and around the penis are only superficial, and do not extend

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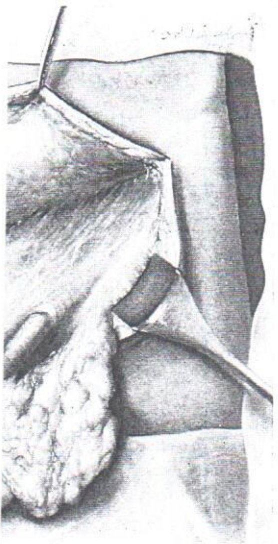

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to Buck's fascia, which encircles the three corpora. With the operator and his first assistant dissecting simultaneously at the

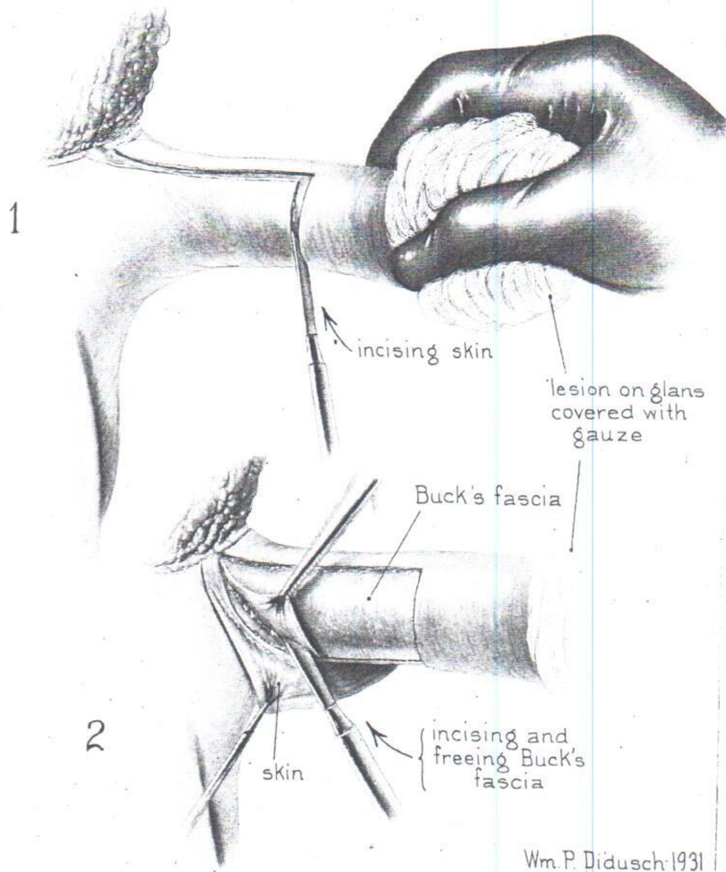

FIG. 4. YOUNG'S RADICAL OPERATION FOR CANCER OF THE PENIS AND GLANDS OF THE GROIN. (THE ORIGINAL TECHNIQUE USED.)

After dissection of glands and line of lymphatics from the groins in pubic regions, including the dorsal line of lymphatics, has been completed. The division of the corpora cavernosa is being made. In A the suture of the copora is shown with the urethra extending 2 cm. beyond.

two upper angles of the wound in the groin, the skin is elevated, subcutaneous fat and glands are dissected cleanly from the deep

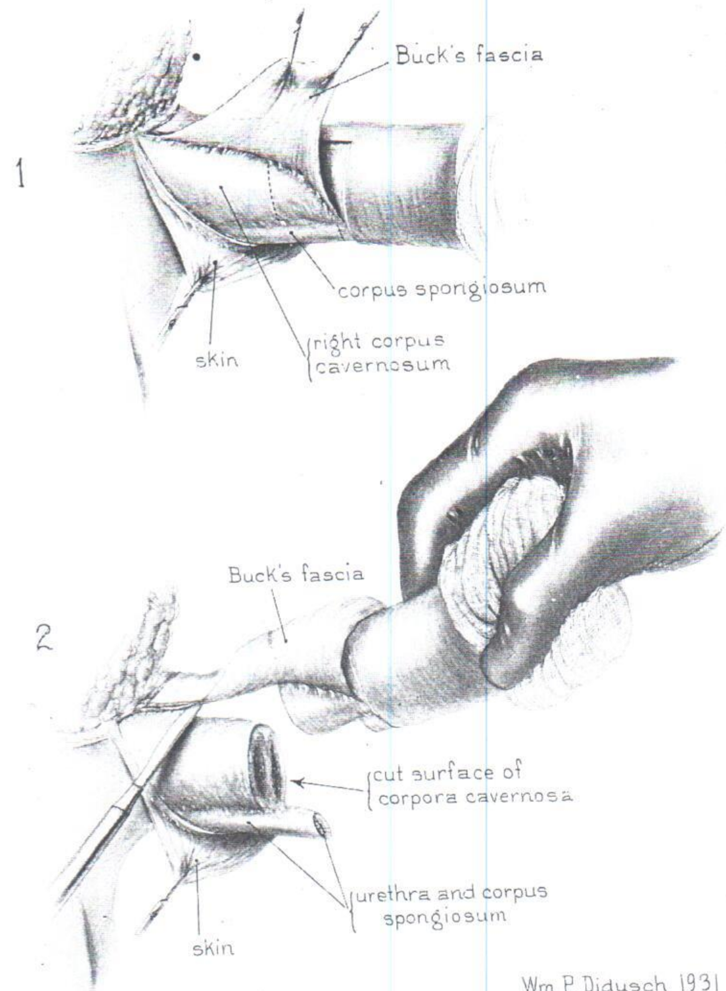

FIG. 5. YOUNG'S RADICAL OPERATION FOR CANCER OF THE PENIS AND GLANDS OF THE GROIN. (NEW TECHNIQUE.)

No. 1, the skin incisions on the left side of the penis. No. 2, after dissecting back the skin from the right lateral and inferior aspects of the penis, Buck's fascia is dissected up from the corpora spongiosum and right corpus cavernosum.

fascia, (fig. 2), proceeding from above downward. As this fatty glandular mass is carried downward, the anterior surface of the

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inguinal canals, the external rings and the spermatic cords with their fascial coverings are exposed (fig. 3). The dissection of fat is continued below Poupart's ligament along the femoral vessels the saphenous artery and vein being ligated above and below the mass, and every care being taken to avoid hemorrhage.

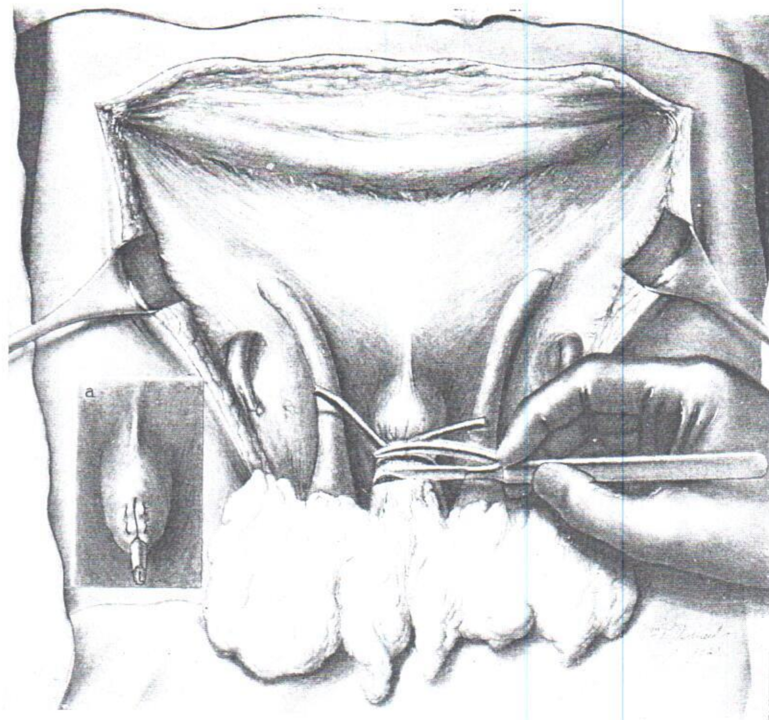

FIG. 6. YOUNG'S RADICAL OPERATION FOR CANCER OF THE PENIS AND GLANDS OF THE GROIN. (NEW TECHNIQUE.)

No. 1, dissection of Buck's fascia completed on right side. No. 2, dissection of Buck's fascia completed on both sides. Further dissection along dorsum of penis shown.

When the scrotum is reached the fat which accompanies the spermatic cord is followed for a short distance down the scrotal sac, so as to insure getting any lymphatics or glands which might lie in the upper part of the scrotum. Attention is next directed to the incisions around the penis. As previously stated, the

circular incision is not completed and does not include the dorsal strip of skin and subcutaneous tissue, which is removed in continuity with the fat of the groins and the penile cancer. The recent addition to the technique to which I have above referred consists in removing from the deeper portion of the shaft of the penis, Buck's fascia in continuity with the dorsal skin strip and penile carcinoma. The technqiue is shown in figure 4. As shown

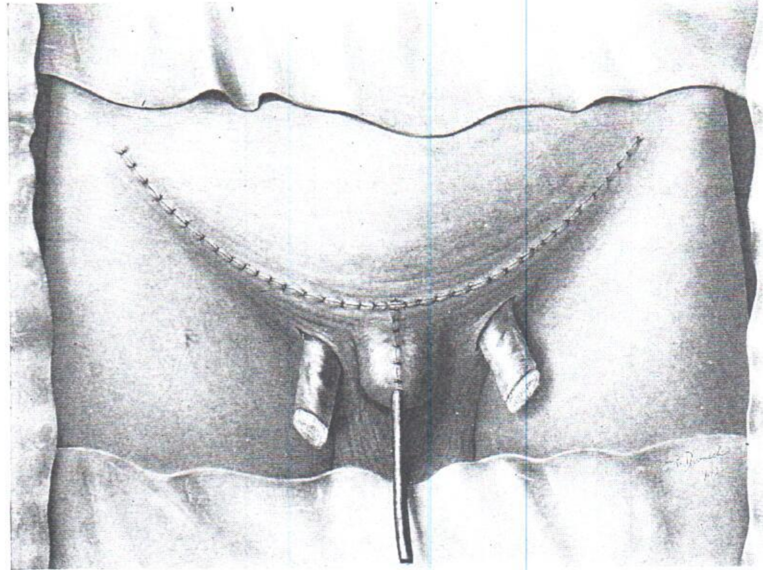

FIG. 7. YOUNG'S RADICAL OPERATION FOR CANCER OF THE PENIS AND GLANDS OF THE GROIN. (NEW TECHNIQUE), COMPLETED WITH CATHETER IN URETHRA AND CIGARETTE DRAINS INTO EACH GROIN

here the circular incision, which begins with the right lateral longitudinal incision extends downward around the penis, through the skin and subcutaneous fat, but should not reach Buck's fascia. The skin surrounding the base of the penis is then dissected backward for a short distance, exposing Buck's fascia, which covers the corpus cavernosum and spongiosum. A longitudinal incision is then made through Buck's fascia along the undersurface of the corpus spongiosum and Buck's fascia is then dissected up from the right lateral aspect of the spongiosum and

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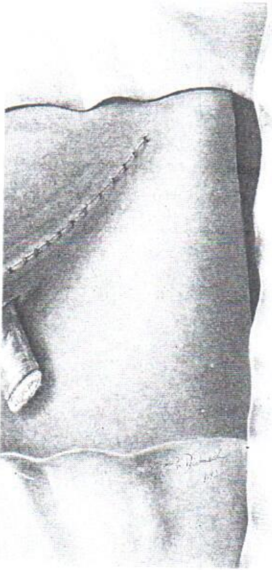

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cavernosum until the suspensory is reached when this fascia is divided transversely. The same procedure is carried out on the opposite side. The corpus spongiosum is then divided, obliquely, and the corpora cavernosa transversely at a point 1.5 to 2 cm. further back, as shown in figure 5. In this way not only is the

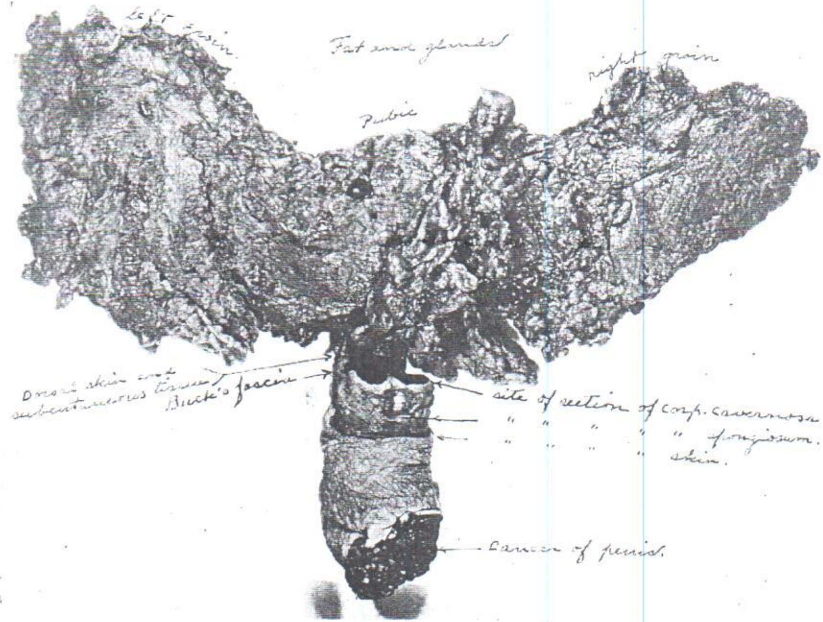

FIG. 8 YOUNG'S RADICAL OPERATION FOR CANCER OF THE PENIS AND GLANDS OF THE GROIN. SPECIMEN REMOVED

Under surface of penis showing carcinoma, transverse section of penis 3 cm. above tumor. The continuous line of lymphatics and fat leading to prepubic fat above is shown; this includes Buck's fascia as shown.

complete continuity of the dissection which has been carried out since 1907 preserved, but in addition Buck's fascia and tissues between it and subcutaneous tissue of the dorsum are also removed, thus adding somewhat to the radical character of the operation. The ends of the corpora cavernosa, which had been previously clamped to avoid hemorrhage, are brought together,

as shown in figure 6, insert *A*, the mattress sutures thoroughly arresting the hemorrhage. The urethra, which projects 1.5 to 2 cm. beyond the stump of the ligated corpora cavernosa, is then sutured into the skin, which is drawn over it along the dorsum by interrupted sutures, as shown in figure 7. Drainage of both groins with iodoform cigarette drains is very important, so as to provide for escape of serum, and also to take care of any infection which may occur. The specimen removed is shown in figure 8, in which the radical character of the operation and continuity of the removal is well demonstrated.

In a report of this operation in Young's *Practice of Urology* we stated:

> We are convinced that the operation herein described is sufficiently radical; that the removal of the testes should be avoided; that nothing is to be gained by the transplantation of the urethra into the perineum. Our cases have had good functional results, could usually void urine in satisfactory stream without wetting the scrotal skin, and in many cases enjoyed sexual intercourse, the ejaculation being quite satisfactory.

Dr. Lewis' study of much longer series of cases which we have now had brings additional proof of the radical character of this operation, and the very satisfactory results which were obtained when a chance of radical cure is present. The cases in which a radical cure has not been obtained have in almost all instances been greatly neglected, and the operation so delayed that a recurrence was almost inevitable. But even with the presence of definitely involved glands of the groin, the operation is generally indicated to avoid the sloughing breakdown which often occurs when these are not removed. On this account we feel more than ever fortified in our belief that radical operation is indicated in almost all cases. When the patient is in satisfactory condition the operation should have little or no mortality. The excellent functional results obtained, and freedom from local recurrences seem to show conclusively that the operation is sufficiently radical, and at the same time remarkably conservative of normal functions.

REFERENCE

(1) YOUNG: Practice of Urology, 1926. W. B. Saunders Company, Philadelphia and London.