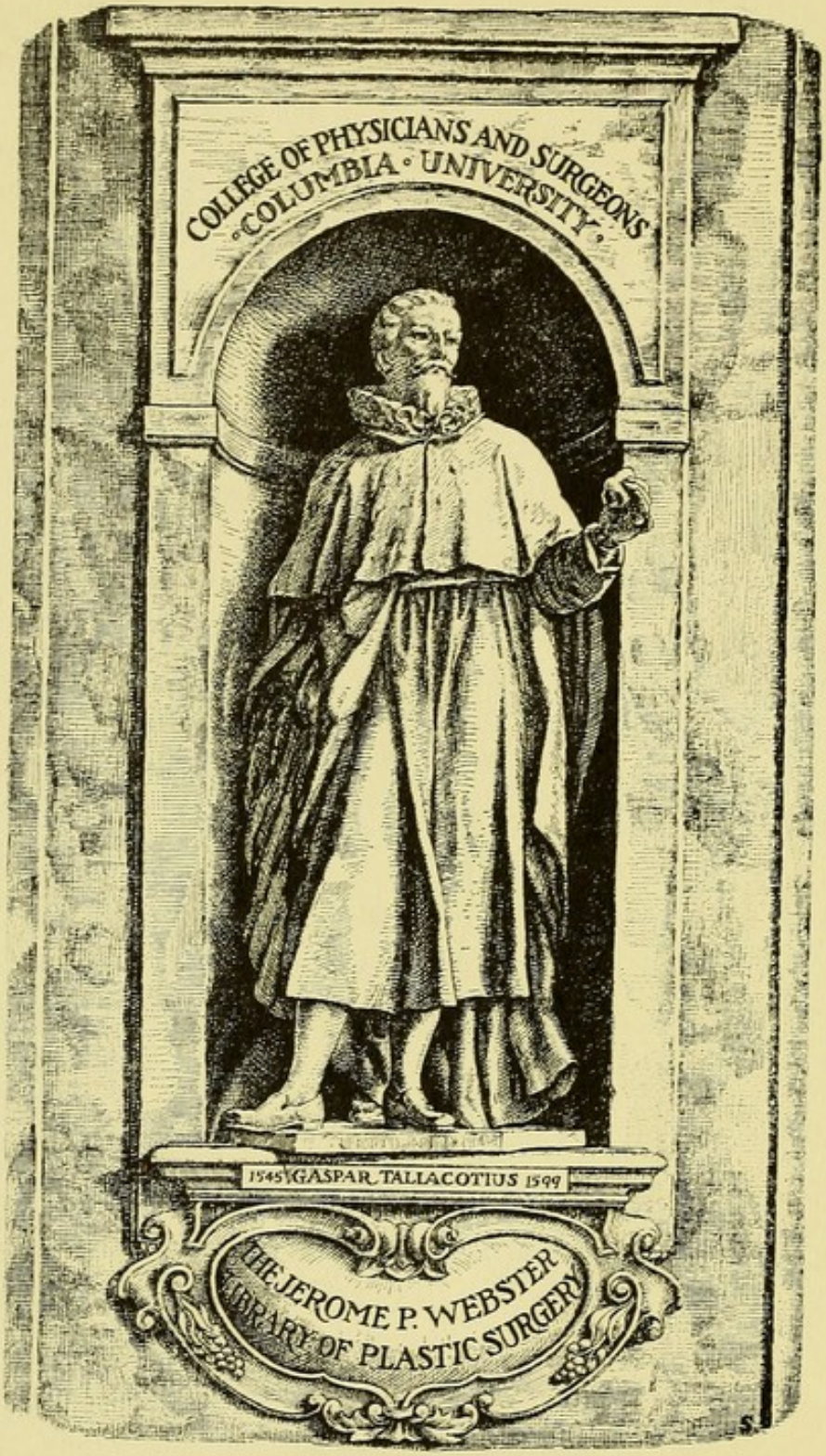
The radical cure of inguinal hernia in the male / byWilliam S. Halsted.

Halsted
The radical cure of inguinal hernia
in the male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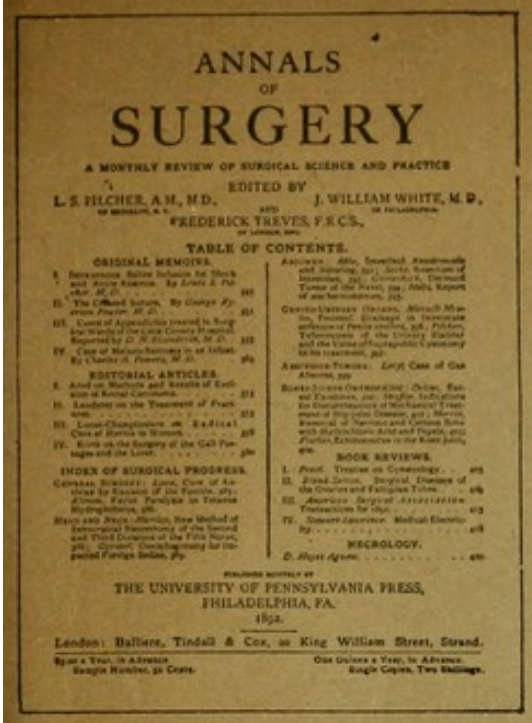

ANNALS
OF
SURGERY

A MONTHLY REVIEW OF SURGICAL SCIENCE AND PRACTICE

EDITED BY

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MAY, 1893

The Radical Cure of Inguinal Hernia in the Male.

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THE RADICAL CURE OF INGUINAL HERNIA IN THE MALE.[1]

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Just now most of the so-called radical-cure operations are under a cloud. They have not withstood the test of time. Modern text-books of surgery refer to operations for the radical cure of hernia with more or less misgiving. The newest American surgery[2] disapproves of operations for the radical cure of reducible hernia if a truss can be worn, and believes that Czerny's method is as good as any, should an operation be necessary.

The most telling blows against radical-cure operations in this country have been dealt, perhaps, by Bull. His papers on the radical cure of hernia and on relapses after the various operations for the radical cure of hernia have produced a profound impression on both practitioners of medicine and practitioners of surgery. Bull concludes the first of these papers[3] as follows: "These observations will, without doubt, be duplicated in the cases yet to be traced, and go to strengthen the conviction that all methods of radical cure will be found unsatisfactory." In his second paper[4] he writes: "I hold, after the knowledge of these failures, and in view of the well-established fact that after the old operations for hernia recurrence has been often long delayed, that it is wise to drop the term *cure*, and to estimate the value of given procedures by the relative proportion of relapses."

From 1883 to 1885 Bull operated for the cure of hernia

[1]Read at the Annual Meeting of the Medico-Chirurgical Faculty of Maryland, at Easton, Md., November 17, 1892.

[2]An American Text-book of Surgery. Keen and White.

[3]Bull: On the Radical Cure of Hernia, with Results of One Hundred and Thirty Operations: Medical News, 1890.

[4]Bull: Notes on Cases of Hernia which Have Relapsed after various Operations for Radical Cure.

chiefly by what he calls Socin's method—ligature and excision of the sac. From 1885 to 1889 he employed what he calls Bank's method—ligature and excision of the sac, with suture of the pillars of the external ring. Since 1889 he has practiced the sewing up of the canal after ligating and excising the sac.

Of the cases operated upon by the first method, at least 27.27 per cent. relapsed within one year; of those operated upon by the second method, at least 40 per cent. relapsed within one year; and of those operated upon by the third method, at least 42 per cent. relapsed within one year.

"My own results," writes Bull, "as to relapse being no better by the complicated method of suture of the ring alone, or of the ring and canal, than by the simpler method of excision of the sac after ligature, I shall confine myself to that method of operation till other procedures, which have stood the test of years, make a more promising showing." Bull's results became less promising the longer he observed his cases. From a series of one hundred and thirty-six cases there remained only four which had been over four years without recurrence. In his second paper Bull says: "Now that ten years have elapsed since the modern radical operations have been in vogue, we ought to hear of, or have presented to us, patients who have been more than five years, at least, without relapse. We could naturally expect to see such cases occasionally at a special hospital. But there are none such." Notwithstanding these facts, Bull does not advise that operations for the relief of hernia be discontinued, nor does he wish to discontinue efforts to discover more satisfactory methods for its cure. For, of the cases operated upon, almost all were relieved for a time, and some for several years; and of the cases which had relapsed, the majority were more comfortable than they had been before they were operated upon.

These are admirable papers, and faithfully depict what is to be expected if a hernia is operated upon by the methods which Bull has employed. To-day, therefore, the majority of surgeons operate for the radical cure of hernia only when the hernia is strangulated or cannot be retained with a truss. A few believe

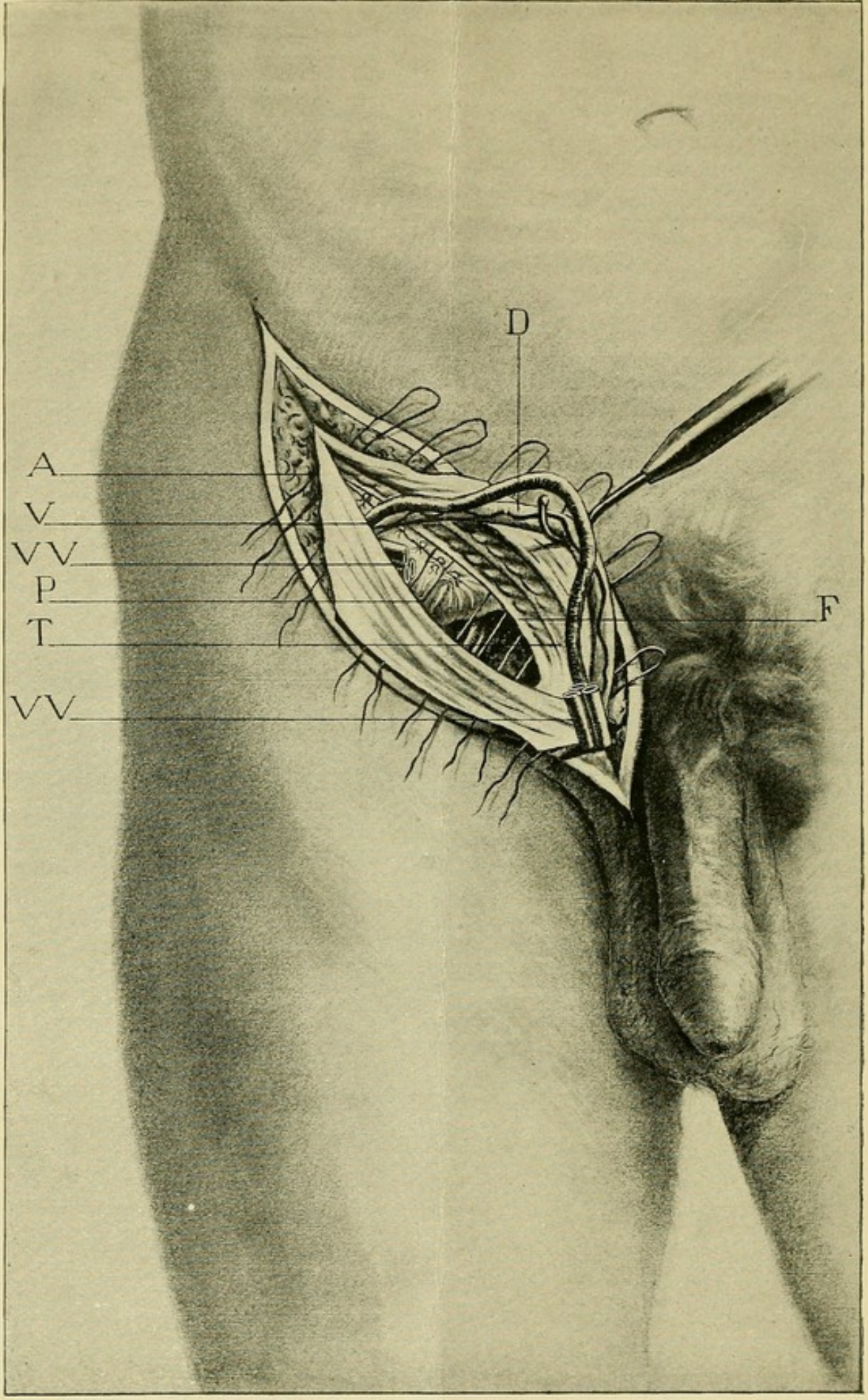

FIG. 1.—Inguinal canal laid open; sac cut away after suture of the peritonæum; elements of cord isolated and lifted up; deep mattress sutures introduced.

A.—Aponeurosis of the external oblique muscle.

D.—Vas deferens.

F.—Fascia transversalis.

P.—Peritonæum.

S.—Buried skin-stitch, tied.

S′.—Buried skin-stitch, introduced but not tied.

T.—Conjoined tendon.

V.—Vein.

V.V.—Stumps of excised veins.

that they have had results good enough to justify their operations upon almost every case which presents itself.

More than three years ago I described a new operation for the cure of inguinal hernia in the male.[1] Six or eight months later, Bassini, of Padua, published his operation for cure of inguinal hernia, which he had performed two hundred and fifty-one times, with only seven returns and no deaths except one, and that from pneumonia after the wound had healed. Bassini's operation and mine are so nearly identical that I might quote his results in support of my operation.

Instead of trying to repair the old canal and the internal abdominal ring as Macewen had tried to do, I make a new canal and a new ring. The new ring should fit the cord as snugly as possible, and the cord should be as small as possible. The skin incision extends from a point about 5 cm. above and external to the internal abdominal ring to the spine of the pubes. The subcutaneous tissues are divided so as to expose clearly the aponeurosis of the external oblique muscle and the external abdominal ring. The aponeurosis of the external oblique muscle, the internal oblique and transversalis muscles and the transversalis fascia are cut through from the external abdominal ring to a point about 2 cm. above and external to the internal abdominal ring. The vas deferens and the blood-vessels of the cord are isolated. *All but one or two of the veins of the cord are excised.* The sac is carefully isolated and opened and its contents replaced. A piece of gauze is usually employed to replace and retain the intestines. With the division of the abdominal muscles and the transversalis fascia the so-called neck of the sac vanishes. There is no longer a constriction of the sac. The communication between the sac and the abdominal cavity is sometimes large enough to admit one's hand. The sac having been completely isolated and its contents replaced, the peritoneal cavity is closed by a few fine silk mattress sutures, sometimes by a continuous suture. The sac is cut away close to the sutures. The cord in its reduced form is raised on a hook

[1] Bulletin of the Johns Hopkins Hospital, Vol. I, No. 1; Johns Hopkins Hospital Reports, Vol. II, Surgical fasciculus, No. 1.

out of the wound to facilitate the introduction of the six or eight deep mattress sutures which pass through the aponeurosis of the external oblique and through the internal oblique and transversalis muscles and transversalis fascia on the one side, and through the transversalis fascia and Poupart's ligament and fibres of the aponeurosis of the external oblique muscle on the other. (See Fig. 1.)

The two outermost of these deep mattress sutures pass through muscular tissues and the same tissues on both sides of the wound. They are the most important stitches, for the transplanted cord passes out between them. If placed too close together, the circulation of the cord might be imperiled, and if too far apart the hernia might recur. They should, however, be near enough to each other to grip the cord. (See Fig. 2.) The precise point out to which the cord is transplanted depends upon the condition of the muscles at the internal abdominal ring. If in this situation they are thick and firm, and present broad raw surfaces, the cord may be brought out here. But if the muscles are attenuated at this point, and present thin cut edges, the cord is transplanted farther out. The skin wound is brought together by buried skin sutures of very fine silk.[1] The transplanted cord lies on the aponeurosis of the external oblique muscle and is covered by skin only. (See Fig. 3.)

Bassini believes that he restores the inguinal canal to its physiological condition, inasmuch as he makes "a canal with two openings, an abdominal and a subcutaneous; furthermore with two walls, a posterior and an anterior, through the middle of which the spermatic cord passes obliquely." But the original canal is not by any means an affair so simple as Bassini's. To reproduce the equivalent, anatomically and physiologically, of the inguinal canal is, I believe, impossible. Moreover, we do not know that nature has made the best possible provision against hernia in providing, as it does, for the passage of the cord through the abdominal wall. Bassini's operation, although essentially the same as my operation, is different in some respects. 1. Bassini

[1] Instead of the interrupted buried skin suture, as shown in Fig. 3, we now use an uninterrupted skin suture without knots, which is withdrawn after two or three weeks.

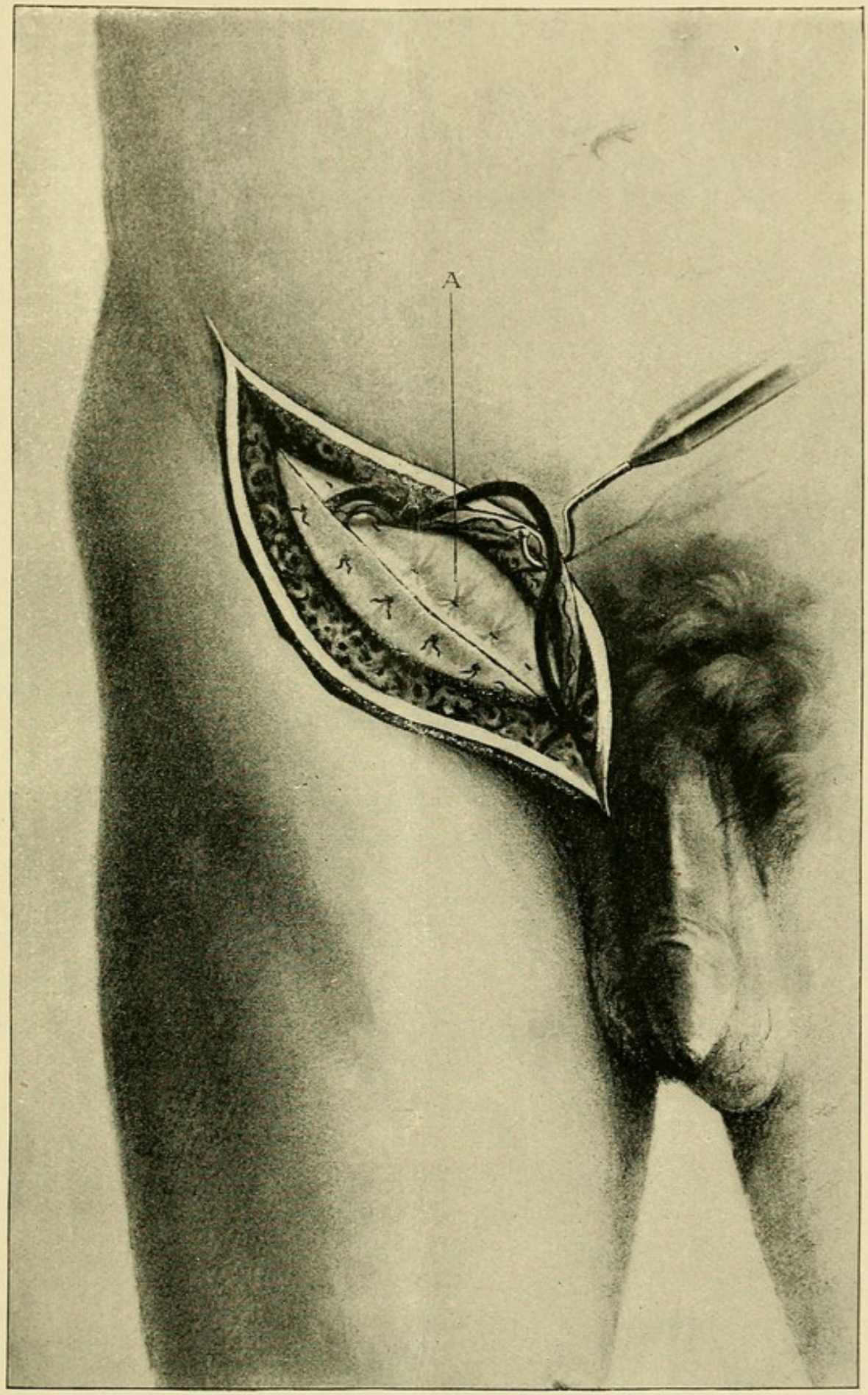

FIG. 2.—Deep sutures tied.

always brings the cord through the muscles at the internal abdominal ring. The point out to which I transplant the cord is determined, as I have said, by the condition of the muscles. 2. Bassini does not excise the superfluous veins. I believe that it is advisable to reduce the size of the cord as much as is practicable. 3. In Bassini's operation the cord lies posterior to the aponeurosis of the external oblique muscle; in mine, between this aponeurosis and the skin. To secure for the cord the position which Bassini recommends, an additional row of stitches is required. Unless it should be demonstrated by a comparison of the results of the two methods that there is something to be gained by these additional stitches, it would be well for the sake of the wound and the operator to discard them.

Kocher thinks that the methods of Bassini and himself are to be preferred to other methods, Macewen's for example, because they (the former) enable the patient to get out of bed on the eighth day. I fail to see anything in the methods of Kocher and Bassini and myself which might enable the patient to get out of bed earlier than if he had been operated upon by the method of Macewen. The time to be spent in bed depends upon the judgment of the surgeon and not, open methods excluded, upon the particular method. Our patients are kept upon their backs for twenty-one days. Wounds thoroughly healed throughout per primam are not strong in eight days. One can easily tear open a typically healed wound which is not more than six or seven days old. Not long ago, in attempting to restore a club foot to its proper position, I accidentally and with very little force, pressed wide open a wound which had healed in the typical way, and was eight days old.

A wound is certainly stronger on the fourteenth day than it is on the seventh, and stronger on the twenty-first day than on the fourteenth. Just how long wounds of skin and muscle which have healed by first intention may continue to increase in strength we do not know. In our hernia wounds, the subcutaneous ridge of the aponeurosis and muscle which results when the parts have been brought together properly by buried mattress stitches does not disappear entirely for five or six or more weeks. I some-

times question the propriety of allowing, as I do, my patients to walk about on the twenty-first day.

The technique of operations for the radical cure of hernia should be usually perfect, because we have to violate occasionally what I consider to be one of the most important principles of antiseptic surgery. We have to constrict the tissues somewhat with our deep sutures. It is not always possible to bring together the pillars of the external abdominal ring without a little tension. One can, of course, make relaxation cuts, but these would be quite as undesirable as a moderate amount of tension. Our hernia wounds illustrate admirably the danger of constricting tissues. We never resort to drainage of any kind for fresh wounds. And with the exception now and then of a hernia wound, none[1] of our fresh wounds suppurate. Inasmuch as we rarely, if ever, have occasion to constrict tissues in other fresh wounds, it is almost certain that the occasional stitch abscess in a hernia wound is due to tissue constriction plus, of course, the infection. To provide for a good circulation in every particle of tissue in and immediately about a wound is as much a part of our technique as are the ordinary antiseptic precautions. The better the circulation the less the likelihood of suppuration.[2]

Since the opening of the Johns Hopkins Hospital, three and one-half years ago, eighty-two operations for the radical cure of hernia have been performed, and without a death. Sixty-four of the cases were males, eighteen were females. Of the females, four had femoral, thirteen inguinal and one umbilical hernia. Of the males, sixty-three had inguinal and one femoral hernia. Five of the males were operated upon by Dr. Brockway by McBurney's method. Of these five cases two have recurred; two have

[1] Not more than one or two in a year. *Vide* Johns Hopkins Hospital Reports, Vol. II, Surgical fasciculus, No. 1.

[2] I have performed three amputations within a year and a half through tissues which were almost surely infected, and with instruments and hands which were as surely infected. No attempt was made to disinfect the wounds except that they were washed with a sterilized salt solution, and in one instance with warm water from the faucet. Great care was exercised in ligating and sewing and dressing to avoid constricting the tissues and to provide against tension. The wounds were closed as usual. They all healed absolutely by first intention.

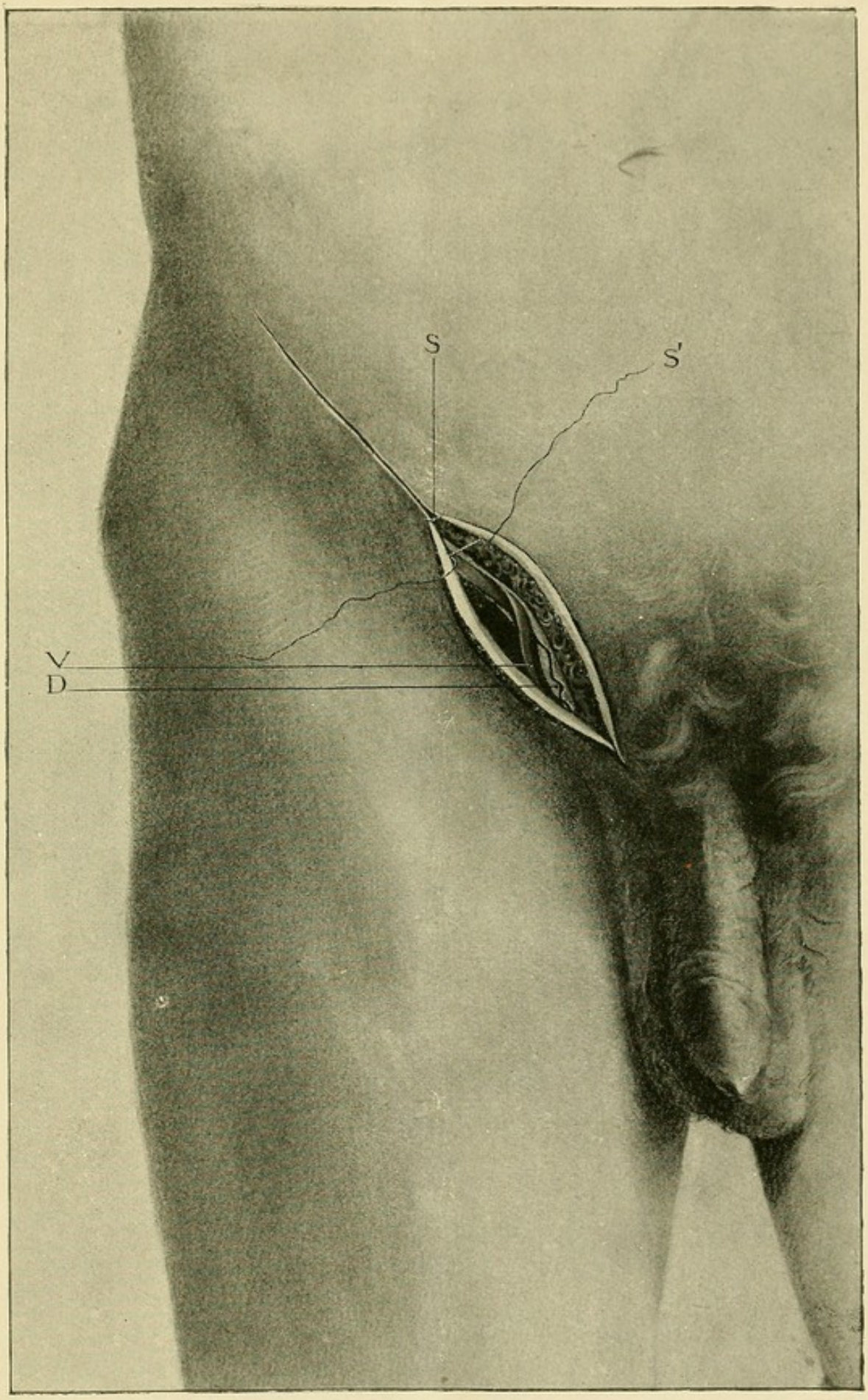

FIG. 3.—The application of the superficial buried sutures.

not been heard from; and one, a boy two and one-half years old, is still well, twenty months after the operation. The cord in so young a patient is so very small that the hernia might be cured for several years by almost any method.

My operation, with or without modification, was employed in fifty-eight cases. Of the cases which healed per primam not one has recurred. The wounds which suppurated were immediately laid wide open and allowed to heal by granulation. For the result in such cases the open method, and not mine, is responsible. There have been six recurrences from methods not my own—Nos. 2, 12, 24, 27, 39, 52. No. 2 took cathartics and got out of bed a few days after the operation. He was discharged for insubordination on the eighth day, before his wound was firm. In No. 12 the cord was not transplanted. In No. 24 a stitch abscess formed several weeks after his discharge. There is a slight impulse, on coughing, at the site of the abscess. In No. 27 the wound suppurated. The stitches were removed and the wound was laid wide open and allowed to heal by granulation. This patient had a diffuse suppurative inflammation of the neck at the time of the operation. No. 39, the wound was opened for hæmorrhage and allowed to heal by granulation. No. 53, the wound suppurated, was laid open, and healed by granulation. The patient has a flabby abdominal wall. The scar has stretched throughout its entire length, and there is an impulse all along the scar on coughing.

Statistics of Operations at the Johns Hopkins Hospital for the Radical Cure of Hernia.[1]

1. W. H. R., aged eight. Large, right, congenital, inguino-scrotal, reducible hernia. Operation, June 6, 1889. Healed per primam. Last observation, January 6, 1891; the result is still perfect, two years after the operation.

2. G. H., aged twenty. Large, right, oblique, inguino-scrotal, reducible hernia. Operation, June 17, 1889. Healed per primam.

[1] A few cases have been added to this list since the reading of the paper.

Discharged for insubordination, June 24, 1880. Patient got out of bed several times and took cathartic pills without permission. June 14, 1892, there is a complete return of the hernia.

3. J. B., aged forty-eight. Very large, right, oblique, inguino-scrotal, reducible hernia. Operation, August 16, 1889. The bladder was caught in one of the stitches, and the wound, consequently, was laid open and allowed to heal by granulation. Last observation, October 3, 1892; the hernia has not returned, two and one-half years after the operation.

4. M. E. L., aged fourteen. Small, right, oblique, inguinal, reducible hernia. McBurney's operation, August 8, 1889. Last observation, March 21, 1892; the hernia has not returned, two and one-half years after the operation.

5. J. D., aged eight. Small, left, oblique, inguinal, reducible hernia. Operation, September 10, 1889. Healed per primam. Last observation, May 3, 1892; result still perfect, two years and five months after the operation.

6. C. B., aged thirty-eight. Small, left, femoral, reducible hernia. Operation, November 10, 1889. Healed per primam. Discharged April 11, 1889.

7. E. F., aged seven. Small, right, congenital, inguinal, reducible hernia. Operation, December 10, 1889. Healed per primam. Last observation, March 3, 1892; result still perfect, two years five months after the operation.

8. J. W. F., aged twelve. Left, oblique, inguinal, reducible hernia. Operation, December 21, 1889. Healed per primam. Last observation, January 30, 1890; result still perfect. March 1, 1892, patient cannot be found.

9. S. McN., aged forty-six. Large, right, femoral, strangulated hernia. Operation, December 30, 1890. Discharged, February 2, 1891. Result unknown.

10. L. L., aged twenty-seven. Small, right, oblique, inguinal, reducible hernia. Operation, February 14, 1890. Open wound. March 21, 1892, the hernia has not returned.

11. H. S., aged thirty-seven. Large, right, inguinal, reducible hernia. Operation, February 2, 1890. Healed per primam. Last observation, December 1, 1892, linear scar; result still perfect, nearly three years after the operation.

12. G. G., aged twenty-eight. Large, left, oblique, inguino-scrotal, irreducible hernia. Operation, May 2, 1890. Cord not

transplanted. Healed per primam. October 14, 1890, the hernia has recurred.

13. J. H., aged thirty-nine. Small, left, direct, inguinal, reducible hernia. Operation, May 20, 1889. Healed per primam. Last observation, June 21, 1891, the hernia has not recurred.

14. E. H., aged thirty-five. Small, left, femoral, strangulated hernia. Operation, May 17, 1890. Discharged, June 22, 1890. Result unknown.

15. E. P., aged forty-five. Small, right, oblique, inguinal, reducible hernia. Operation, May 29, 1890. Healed per primam. Last observation, June 16, 1890, the hernia has not recurred.

16. H. B., aged eight. Small, right, inguinal, reducible hernia. McBurney's operation, July 17, 1890. Not heard from since discharged, August 23, 1890.

17. H. D., aged two and one-half. Right, inguino-scrotal, congenital, reducible hernia. McBurney's operation, July 17, 1890. Last observation, March 1, 1892, the hernia has not recurred.

18. A. E., aged five. Small, right, oblique, inguinal, reducible hernia. McBurney's operation, July 23, 1890. November 11, 1890, the hernia has recurred.

19. G. W., aged forty-five. Small, right, oblique, inguinal, reducible hernia. McBurney's operation, May 23, 1890. Not heard from since discharged, September 8, 1890.

20. K. F., aged eleven. Small, right, oblique, inguinal, reducible hernia. McBurney's operation, August 4, 1890. Last observation, March 27, 1892, the hernia has not recurred.

21. E. W., aged five. Small, left, oblique, inguinal, reducible hernia. McBurney's operation, August 11, 1890. November 11, 1890, the hernia has recurred. Patient wears truss.

22. D. H., aged nine. Small, left, oblique, inguinal, reducible hernia. Operation, August 23, 1890. Healed per primam. Last observation, March 23, 1892, linear scar, result still perfect.

23. T. Y., aged fifty-two. Large, right, oblique, inguinal, irreducible hernia. Operation, September 17, 1890. The adhesions were too firm and too extensive to admit of the reduction of the hernia.

24. J. C. H., aged twenty-seven. Large, left, oblique, inguinal, reducible hernia. Operation, September 24, 1890. Healed per primam. Last observation, November 15, 1892. A few weeks after the patient had left the hospital a small abscess formed about

one of the stitches. Just at this spot there is a distinct impulse on coughing.

25. G. S., aged forty. Large, left, oblique, inguino-scrotal, irreducible hernia. Operation, September 27, 1890. The operation was a difficult one, and consumed two hours. Stitch abscess, March 1, 1892. Patient cannot be found.

26. C. M., aged four. Large, right, inguinal, congenital, reducible hernia. Operation, October 7, 1890. Healed per primam. March 1, 1892, patient cannot be found.

27. M. C., aged twenty. Large, right, oblique, inguino-scrotal, reducible hernia. Operation, November 26, 1890. Healed per primam. The wound had been healed nearly three weeks when an abscess formed about the outermost stitch. This might be accounted for by the fact that the patient had at the time an acute purulent inflammation of the neck. Last observation, June 5, 1892, the hernia is beginning to recur.

28. W. M. S., aged three. Large, right, oblique, inguinal, strangulated hernia. Operation, November 10, 1890. Healed per primam. Last observation, March 25, 1892, firm linear scar, result still perfect.

29. E. L. P., aged seven. Small, right, oblique, inguinal, reducible hernia. Operation, November 21, 1890. Healed per primam, except for a small stitch abscess. Last observation, March 20, 1892, linear scar, perfect result.

30. A. M., aged fifteen. Left, oblique, inguinal, reducible hernia. Operation, November 24, 1890. Healed per primam. Last observation, March 28, 1892, linear scar, perfect result.

31. S. P., aged thirty. Small, right, direct, inguinal, reducible hernia. Operation, January 29, 1891. Healed per primam. Last observation, April 2, 1892, linear scar, perfect result.

32. F. H,, aged forty. Small, right, oblique, inguinal, reducible hernia. Operation, January 28, 1890. Healed per primam. Last observation, March 30, 1891, linear scar, perfect result.

33. J. W., aged twenty-eight. Small, right, oblique, inguinal, reducible hernia. Operation, January 23, 1891. Healed per primam. June 1, 1892, cannot be found.

34. F. S., aged twenty-seven. Small, left, oblique, inguinal, reducible hernia. Operation, February 6, 1891. Healed per primam, except for minute stitch abscess. Last observation, March 2, 1891, linear scar.

35. J. L., aged fourteen. Small, left, oblique, inguinal, re-

ducible hernia. Operation, February 20, 1891. Wound suppurated. Last observation, March 1, 1892, hernia has not recurred.

36. J. T., aged forty-seven. Small, right, oblique, inguinal, reducible hernia. Operation, February 24, 1891. Healed per primam. Last observation, November 15, 1892, linear scar, perfect result.

37. P. J., aged six. Small, left, oblique, inguinal, reducible hernia. Operation, March 17, 1891. Healed per primam. Last observation, April 14, 1891, result still perfect.

38. E. K., aged twenty-seven. Small, left, direct, inguinal, reducible hernia. Operation, March 13, 1891, open wound. Last observation, March 21, 1892, the hernia has not recurred.

39. E. J. C., aged twenty-three. Small, right, oblique, inguinal, irreducible hernia. Operation, June 5, 1891, the wound was opened completely for hæmorrhage. Healed by granulation. April 2, 1892, the hernia has recurred.

40. M. P., aged thirty-five. Left, oblique, inguinal, reducible hernia. Operation, May 8, 1891. Stitch abscess. June 1, 1892, patient cannot be found.

41. F. S., aged fourteen months. Small, right, inguino-scrotal, congenital, reducible hernia. Operation, May 19, 1891. Healed per primam. June 1, 1892, patient cannot be found.

42. J. K., aged four. Right, oblique, inguino-scrotal, reducible hernia. Operation, June 26, 1891. Wound suppurated. Last observation, April 5, 1892, the hernia has not recurred.

43. F. D., aged forty-nine. Small, right, oblique, inguinal, reducible hernia. Operation, June 26, 1891. Stitch abscess. Last observation, April 3, 1892, the hernia has not recurred.

44. P. H., aged five. Left, oblique, inguinal, irreducible hernia. Operation, September 11, 1891. October 2, 1891, stitch abscess. March 1, 1892, patient cannot be found.

45. P. C., aged twenty-eight. Small, right, direct, inguinal, reducible hernia. Operation, July 16, 1891. Wound healed per primam. March 23, 1892, patient cannot be found.

46. W. G. W., aged two and one-half. Small, right, inguino-scrotal, congenital, reducible hernia. Operation, July 25, 1891. Wound healed per primam. Last observation, April 1, 1892, linear scar, perfect result.

47. G. B., aged twenty-two. Right, oblique, inguino-scrotal, reducible hernia. Operation, August 4, 1891. Wound healed per primam. Last observation, July 1, 1892, linear scar, perfect result.

48. A. McI., aged twenty-six. Right, oblique, inguino-scrotal,

strangulated hernia. Operation, September 8, 1891. Wound suppurated. Last observation, March 1, 1892, hernia has not recurred.

49. M. W., aged eleven. Right, inguino-scrotal, congenital, reducible hernia. Operation, August 7, 1891. Wound healed per primam. Last observation, November 1, 1891, the hernia has not recurred.

50. G. B., aged three. Small, right, oblique, inguinal, reducible hernia. Operation, September 30, 1891. Wound healed per primam. Ultimate result unknown.

51. J. W. B., aged five. Small, left, oblique, inguinal, reducible hernia. Operation, October 9, 1891. Stitch abscess. Last observation, March 3, 1892, the hernia has not recurred.

52. H. P., aged twenty-nine. Small, right, oblique, inguinal, irreducible hernia. Operation, October 9, 1891. Wound suppurated. Healed by granulation. Last observation, March 20, 1892, the scar has stretched throughout its entire length. Truss advised.

53. E. L. B., aged twenty-eight. Small, right, oblique, inguinal, reducible hernia. Operation, December 3, 1891. Wound healed per primam. Last observation, April 7, 1892, linear scar, perfect result.

54. A. M., aged four. Small, right, oblique, inguinal, strangulated hernia. Operation, November 25, 1891. Stitch abscess. Last observation, April 6, 1892, the hernia has not recurred.

55. H. B., aged twenty-one. Small, left, oblique, inguinal, reducible hernia. Operation, December 10, 1891. Stitch abscess. June 1, 1892, patient cannot be found.

56. H. R., aged twenty. Small, right, oblique, inguinal, irreducible hernia. Patient's hernia has been once unsuccessfully operated upon by another surgeon. Operation, December 8, 1892. Wound healed per primam. Last observation, December 3, 1893, linear scar, perfect result.

57. H. H., aged two. Small, right, oblique, inguinal, reducible hernia. Operation, February 12, 1892. Wound healed per primam. March 1, 1892, patient cannot be found.

58. A. F., aged 30. Very large, left, oblique, inguino-scrotal, reducible hernia. Operation, February 23, 1892. Wound healed per primam. March 1, 1892, patient cannot be found.

59. K. H., aged thirty. Large, left, oblique, inguino-scrotal, reducible hernia. Operation, March 4, 1892. Wound healed per primam. A drop or two of pus about one stitch. March 1, 1893, patient cannot be found.

60. C. S., aged twenty-eight. Small, right, oblique, inguinal, irreducible hernia. Operation, March 11, 1892. The wound healed per primam. June 1, 1892, patient cannot be found.

61. J. S. L,, aged forty-seven. Large, left, oblique, inguino-scrotal, reducible hernia. Operation, April 22, 1892. Stitch abscess. March 1, 1892, patient cannot be found.

62. J. F., aged thirty-eight. Very large, right, oblique, inguino-scrotal, strangulated hernia. Operation, May 12, 1892. The wound healed per primam. Patient had parotid abscess on both sides. Last observation, June 22, 1892, linear scar.

63. C. C., aged sixteen. Small, left, oblique, inguinal, reducible hernia. Operation, May 27, 1892. The wound healed per primam. Last observation, June 27, 1892, linear scar.

64. M. W., aged forty-five. Large, left, oblique, inguinal, strangulated hernia. Operation, May 22, 1892. Wound healed per primam. Last observation, September 1, 1892, linear scar; the hernia has not recurred.

65. T. M., aged thirty-three. Very large, direct, inguino-scrotal, traumatic, strangulated hernia. Operation, May 24, 1892. A gangrenous appendix vermiformis was excised. The wound suppurated. The patient was discharged, July 2, 1892, and cannot now be found.

66. T. McC., aged nine. Small, left, oblique, inguinal, congenital, irreducible hernia. Operation, May 27, 1892. The wound healed per primam. Last observation, June 23, 1892, linear scar.

67. F. C., aged twenty-three. Right, oblique, inguinal, reducible hernia. Operation, June 9, 1892. The wound suppurated. Discharged July 4, 1892.

68. J. McN., aged thirty-four. Large, right, oblique, inguino-scrotal, irreducible hernia. Operation, June 10, 1892. The wound healed per primam. Discharged for insolence, June 25, 1892. Last observation, February 20, 1893, linear scar, perfect result.

69. G. B., aged three. Small, left, oblique, inguinal, reducible hernia. Operation, June 15, 1892. The wound healed per primam except for a minute stitch abscess.

70. J. N. W., aged tv enty-one. Small, left, oblique, inguinal, reducible hernia. Operation, June 16, 1892. Wound healed per primam. Last observation, September 1, 1892, linear scar, perfect result.

71. C. S., aged fifty-eight. Small, right, oblique, inguinal, rreducible hernia. Operation, June 23, 1892. The wound healed per primam. Discharged July 23, 1892.

72. M. W., aged forty-five. Small, right, oblique, inguinal, reducible hernia. Operation, July 5, 1892. The wound healed per primam. Last observatlon, September 1, 1892, linear scar.

73. H. R., aged twenty-five. Very large, right, oblique, inguino-scrotal, irreducible hernia. Operation, August 9, 1892. The wound healed per primam except for slight suppuration about one stitch. Discharged, September 8, 1892, well.

74. G. S., aged twenty-five. Small, left, oblique, inguinal, reducible hernia. Operation, September 1, 1892. The wound healed per primam. Discharged October 5, 1892, well.

75. A. B., aged twenty-five. Left, oblique, inguinal, strangulated hernia. Operation, October 6, 1892. The wound healed per primam. Discharged, November 1, 1892.

76. W. K. H., aged forty-three. Small, left, oblique, inguinal, reducible hernia. Operation, November 29, 1892. The wound healed per primam. Discharged December 27, 1892.

77. C. C., aged twenty-two. Large, right, oblique, inguino-scrotal, reducible hernia. Operation, December 13, 1892. The wound healed per primam. Discharged January 18, 1893.

78. A. E., aged five. Small, right, oblique, inguinal, reducible hernia. A recurrence after McBurney's operation in four months. Operation, December 5, 1890. The wound healed per primam. Last observation, April 6, 1892, the hernia has not recurred.

79. C. M. S., aged fifty. Large, right, femoral, strangulated hernia. Operation, December 25, 1892. Typical healing.

80. B. D., aged twenty-two. Large, left, oblique, inguinal, reducible hernia. Operation, January 13, 1893. Typical healing.

81. J. G., aged fifty-nine. Very large, right, oblique, inguinal, reducible hernia. Operation, January 10, 1893. The wound healed per primam.

82. M. L., aged two. Large, right, oblique, inguinal, strangulated hernia. Operation, January 29, 1893. Typical healing.

Conclusions.

The time has come when one may operate upon almost every case of hernia not only without danger to the patient, but also with an almost certain prospect of success. Those who, with Bull, have dropped the term "cure" may take it up again. That the mortality is practically nothing one may convince himself from the latest statistics.

Svensson and Erdman had from 106 cases one death from enteritis and nephritis on the tenth day, when the wound was perfectly healed. Macewen operated ninety-eight times for the cure of inguinal hernia from 1889 to 1890. The only fatal case was that of a boy three years old who contracted scarlet fever after the operation and died within thirty-six hours. Bassini has operated two hundred and fifty-one times for non-strangulated hernia by his method, with but one death, and this from pneumonia fifteen days after the operation. The wound in the fatal case had healed per primam. Lucas-Championnière from 111 cases lost one from pneumonia. Kocher reports 119 operations for the radical cure of hernia with one death. The cause of death was pulmonary embolism fifteen days after the operation and when the wound was perfectly healed. We have operated eighty-two times for the radical cure of hernia without a death.

If it is objected that had it not been for the operation none of the deaths above enumerated would have occurred, we cannot positively deny it. But it is not improbable, as Kocher cleverly remarks, that if one should keep under observation hundreds of hernia cases of all ages and classes, and present them every day with a good dinner, he would occasionally be able to announce a death among them. As to the ultimate results, I shall refer only to those of Macewen, Bassini and myself. Macewen failed but once in 98 cases, and has had several cases under observation for ten years or longer. Bassini failed but seven times in 251 cases; 108 cases had been cured from one to four and one-half years, 33 from one year to six months, and 98 from six months to one month. In only four cases was the result unknown. It is now nearly four years that I have been operating for the cure of inguinal hernia in the manner just described by me, and thus far I have no failure to record, if we exclude the recurrences which I have reported, and which could not be ascribed to my method.