

THE DUBLIN JOURNAL

OF

MEDICAL SCIENCE.

JUNE 1, 1903.

PART I.

ORIGINAL COMMUNICATIONS.

ART. XXI.—*Notes on Fourteen Cases of Operation for Radical Cure of Inguinal Hernia, between September and December, 1902, at the Royal Infirmary, Dublin.* By WALTER C. STEVENSON, M.D., B.Ch., B.A.O., D.P.H., B.A. Dubl. Univ.; Lieutenant, Royal Army Medical Corps.

IN these notes I have prepared a tabulated statement giving the particulars in each case of radical cure for inguinal hernia performed by me.

Before referring to this it may be advisable to mention briefly the routine followed, and to describe the operations generally.

I. PREPARATION FOR OPERATION.

For a few days before the operation patient has frequent baths, and bowels are well opened by saline aperients. On the day before the parts are shaved and an antiseptic dressing of lint and jaconet, soaked in corrosive sublimate lotion (1 in 2000), is applied, and fixed with a spica bandage. Before putting on the dressing the patient's abdomen and groins are scrubbed for fully twenty minutes with soap and weak carbolic lotion, followed by methylated ether and methylated spirits. A soap and water enema is administered to the patient on the morning of operation.

II. ASEPTIC TECHNIQUE.

A detailed account of aseptic surgery is unnecessary in these notes. The greatest care is taken that nothing except what has been sterilised by boiling, or otherwise rendered aseptic, should come near the site of operation. Surgeons and the Sister wear sterilised gowns, the orderlies white coats. Sterilised towels completely cover the patient, only barely exposing the part of the abdomen necessary for the operation. No. 1 silk alone is utilised for deep sutures, on account of its being more easily and certainly sterilised than the thicker silks. When strong ligatures are required No. 1 silk is used doubled or quadrupled. The tubes of silkworm-gut for the skin incision are kept immersed in 1 in 20 carbolic lotion, and boiled immediately before use.

The results have been very satisfactory, as every wound in the first thirteen cases healed by first intention, and no pus was observed throughout these cases. In the fourteenth and last case, dermatitis occurred over the operation wound, and involved the upper skin sutures.

III. DRESSINGS.

A sterilised pad (large enough to completely cover the skin incision) stitched to the centre of a piece of gauze six inches square. By this arrangement pressure can be maintained on the wound by the pad, while the dressing is secured by applying collodion on the gauze around the skin incision. The whole is covered by a couple of layers of cyanide gauze and wool, and firmly fixed with a spica bandage (flannel).

IV. AFTER TREATMENT.

Plain milk diet and soda water for three days. Mild saline aperient thirty hours after operation. Wound not dressed till the ninth day, unless the patient complained of pain or discomfort. Skin stitches removed at the first dressing. Patient is allowed to sit up from the eleventh to the fifteenth day. Out of bed for half an hour on the thirteenth to the twenty-first day. He is supplied with a fresh bandage and discharged from hospital on six weeks' furlough six to seven weeks after operation. To guard against the patient taking violent exercise, he is repeatedly warned that it is absolutely

necessary for the success of his cure that the wound should be supported by the bandage for at least three months after leaving hospital.

V. OPERATION.

The initial stages of the operation are the same in each case. A skin incision, from three to four inches in length, is made over the inguinal canal, commencing just internal to and a little below the spine of the pubes. Tissues are divided till the fibres of the external oblique with the external ring are exposed and cleared. The coverings of the cord are divided longitudinally, and the sac is isolated as far as the internal ring. A small opening is made in the side of the sac, and the finger passed into the general peritoneal cavity to insure that the sac is empty. The treatment of the sac varies according to the condition found. Preference is always given to Kocher's most recent method of dealing with it, which he calls "the ideal operation for radical cure of hernia." I give a short description of this operation, as it is not as yet published, as far as I know, in any English text-book. I would also like to state my reasons for preferring it, and why it is not applicable in every case.

Kocher's Ideal Operation.—The apex of the sac is grasped by the point of Kocher's hernia forceps (or any other catch forceps with long and slender blades will serve the purpose). The apex is first invaginated into the body of the sac, and then made to pass along the inguinal canal, through the neck of the sac, into the general peritoneal cavity. The skin is retracted upwards. The handle of the forceps is then depressed, causing the point to project against the anterior abdominal muscles, slightly above and external to the internal ring. A small longitudinal incision is made on to the point of the hernia forceps, through the muscles, thus exposing the sac. The sac is secured by an artery forceps and pulled through the above incision, at the same time releasing and withdrawing the hernia forceps. The sac by this procedure is inverted, and now has its peritoneal surface outermost. Its position and direction are completely altered, the neck now projecting against the anterior abdominal wall. The sac is transfixed and ligatured, and amputated close to the abdominal muscles. The

next step consists in narrowing as far as possible the inguinal canal. The forefinger is passed along the canal in front of the cord, thus making certain of its safety by keeping it behind the finger. Seven or eight Lembert's sutures are used as shown in the diagram. The first is passed through

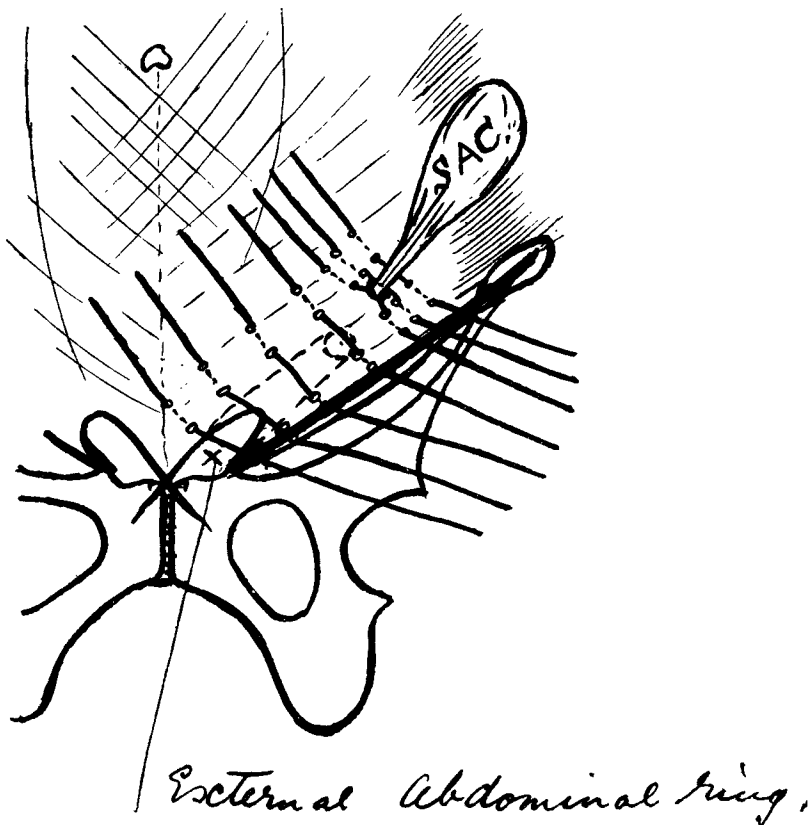


FIG. 1.—Diagram showing sutures passed to close left inguinal canal in Kocher's operation.

the abdominal muscles above the remains of the sac. The second and third sutures are passed through the external lip of the incision in the abdominal muscles, then through the neck of the sac, and finally through the inner lip. The remaining sutures are passed through the anterior wall of the inguinal canal, the last one being utilised in approximating

the pillars of the external ring. With the aid of a director when tying these sutures a puckered groove is formed, which projects backwards into the canal along its whole length.

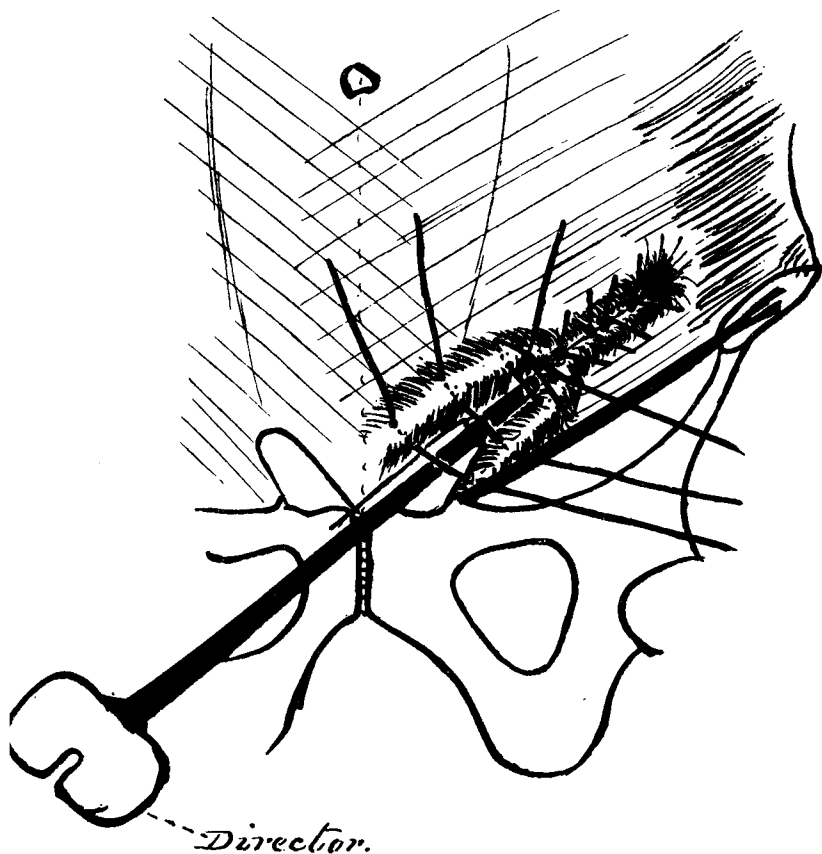


FIG. 2.—Diagram illustrating the result of tying some of the stitches shown in Fig. 1.

The above operation is most suitable when there is a fair sized sac which can be isolated intact. When the sac is somewhat torn and its capacity small, I perform practically the same operation, with the exception that the sac is not turned inside out. Four of the ten cases done by Kocher's method were of the latter variety. In six of the total fourteen cases (43 per cent.) Kocher's ideal operation was employed.

TABLE showing particulars of *Fourteen Cases operated on for Inguinal Hernia*

1 No. of Case	2 Name	3 Age, Years	4 Service when Hernia occurred. Years.	5 Period between occurrence of Hernia and Operation. Months.	6 Whether Truss used	7 Side on which Hernia occurred	8 Variety
1	Constable	23	2	2½	Yes	Right	Congenital
2	Collier -	21½	2½	6	Yes	Right	Acquired
3	Harcourt	26½	2½	2½	No	Right	Acquired
4	Mills -	22½	1½	13	Yes	Left	Acquired
5	Hayes -	21	1½	9	Yes	Right	Acquired ; incomplete
6	Kirby -	20	1½	7	Yes	Right	Acquired
7	Handley -	20	1½	1	Yes	Right	Congenital
8	Branch -	19	1½	14	Yes	Right	Acquired
9	Lamb -	20	1	10	Yes	Left	Acquired
10	Kelly -	19	1½	1	No	Left	Congenital ; incomplete
11	Ellis -	23	Under 1½	Short	No	Left	Acquired
12	Powell -	19	1½	9½	Yes	Right	Acquired
13	Jones -	20	1½	4	No	Right	Acquired
14	Davies -	22	1½	1	No	Right	Acquired

Cases 1 to 13 healed by first intention.

between September, 1902, and January, 1903, at the Royal Infirmary, Dublin.

9	10	11	12	13
Cause	When and where first noticed	Sac	Operation	Remarks
Direct injury while exercising a horse	In barrack room the same evening	Very adherent to cord and surrounding tissues	Kocher	—
Do.	A few days later	Opaque and thickened	Kocher, ideal	—
Do.	On day of injury	Transparent and with thin walls	Kocher, ideal	Highest temperature after operation, 98° 60 F.
Attributed to a course in the gymnasium	At gymnasium	Small and thickened; easily isolated	Kocher	Rupture gave patient little inconvenience, but disqualified him for foreign service; highest temperature after operation, 98° 60 F.
Direct injury exercising a horse	A few days later	Peritoneum forming sac bulging at internal ring	Bassini	Highly-arched conjoined tendon; structures forming inguinal canal badly developed.
Attributed to gymnasium	At gymnasium	Transparent with very thin walls	Kocher	—
Direct injury in riding school	At stables a few days later	Thin and very adherent to cord	Modified Bassini	Sac passed through external oblique and neck fixed there; testicle is retracted to external ring.
Direct injury at gun practice	While at work a few days later	Thickened and opaque; occluded near neck	Kocher	Rupture descended $\frac{1}{2}$ inch into scrotum after severe straining; other bronchitis followed operation.
Direct injury lifting heavy weight on coal fatigue	In barrack room the following morning	Thickened and opaque	Kocher, ideal	—
Attributed to gymnasium	At gymnasium	Thin-walled, and transparent cord imbedded in posterior wall	Bassini	Omental hernia; descended with great difficulty; diagnosis not verified till six days after admission to hospital.
Do.	On inspection by a medical officer as a prisoner	No sac found protruding into inguinal canal	Bassini	Extensive varicocele excised; large and patulous internal ring and inguinal canal not completely exposed, as patient took anæsthetic badly; operation satisfactory, as inguinal canal well closed up.
Direct injury at gymnasium	In barrack room following day	Thickened and opaque	Kocher, ideal	—
Direct injury in riding school	In barrack room the same day	Do.	Kocher, ideal	—
No history of injury	In barracks while wearing tight overalls	Transparent, but with firm walls	Kocher, ideal	Omental hernia; third day dermatitis occurred, which subsequently involved tracks of upper skin sutures; lower half of wound healed by first intention; dermatitis at first strictly confined to the area over which iodoform gauze had been applied; this dressing used in this case only.

Kocher, I believe, estimates that the ideal operation is possible in only about 25 per cent. of his cases. But these are probably drawn from every age and condition of patient, while the hernias in a Military Hospital are nearly all found in young, healthy men, and are usually of short standing when operated on.

The advantage of Kocher's operation as compared with Bassini's—(1) There is less injury to the tissues in that the external oblique muscle is not divided along the inguinal canal as in Bassini's operation; (2) on account of this the patient can be allowed about sooner with less risk of injurious effects; (3) should suppuration occur and the deep stitches give way, the parts are in no worse condition than before the operation.

But Bassini's operation is preferable (1) in most congenital hernias, where the sac and cord are in intimate connection, rendering it impossible to isolate the sac without considerably damaging it (examples—Cases 7 and 10); (2) when the sac cannot be seen at the external ring, and it is necessary to explore the inguinal canal (examples—Cases 5 and 11).

VI. FURTHER REMARKS ON THE TABULAR STATEMENT.

It is interesting to note:—(1) Column 4—seven of the fourteen cases (50 per cent.) had under four months' service when the hernia occurred; (2) Column 7—ten of the fourteen cases (71 per cent.) were on the right side; (3) Column 9—in nine of the fourteen cases (64 per cent.) there was a definite history of an injury.

I attach some particulars of the temperatures in each case.

In conclusion, I have to thank Lieut.-Cols. Hodson and MacNeece, R.A.M.C., for giving me the opportunity and every facility for performing these operations, and also Mr. Haughton, Visiting Surgeon, Dr. Steevens' Hospital, Dublin, for his assistance at the first two, and Lieutenant Power, R.A.M.C., and Civil Surgeon G. P. Meldon in the remainder of the cases.

TABLE OF TEMPERATURES showing the evening temperatures, the morning temperatures being always about normal.

—	—	1st Evening of Operation	2nd Evening after Operation	3rd Evening after Operation	4th Evening after Operation	5th Evening after Operation	6th Evening after Operation	7th Evening after Operation	8th Evening after Operation	—
1	Constable	98·8	Normal	99	Normal	Normal	Normal	°	°	
2	Collier -	99	99	99·8	99	100	99·6	Normal	Normal	
3	Harcourt	98·6	Normal	Normal	Normal	Normal				
4	Mills -	98·6	98·6	Normal	Normal	Normal				
5	Hayes -	100·4	98·6	Normal	Normal	Normal				
6	Kirby -	98	99·8	Normal	Normal	Normal				
7	Handley -	98·4	100	99	99	Normal	Normal	Normal		
8	Branch -	99	99·8	100	100·2	101	Sub-normal	Sub-normal	—	Suffered from ether bronchitis. Morning temp. 5th day was 101·8°
9	Lamb -	102·2	99·8	99	Normal	Normal				
10	Kelly -	98·2	99	Normal	98·8	98·8	Normal	Normal	Normal	
11	Ellis -	98	98·4	100	99·4	99·2	Normal	Normal	Normal	Suffered from tympanites and constipation on 3rd, 4th & 5th days
12	Powell -	99·8	98·8	Normal	Normal	Normal				
13	Jones -	99	99·2	98·8	Normal	Normal	Normal			
14	Davies -	99	98·6	100	101	Normal	Normal	Normal	—	Dermatitis occurred on 3rd day when iodiform gauze had been applied. On 4th day suppuration involved upper skin sutures.