

# A MODIFIED OPERATION FOR SCROTAL VARICOCELE,

TOGETHER WITH A LOCAL ANÆSTHETIC TECHNIQUE.

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In discussing the operation for varicocele the text-books of surgery for the most part content themselves with a description of the common procedure—a resection of veins and a tying together of their ligatured ends. The literature of the subject, however, presents an extraordinary number of variations from this usual technique. During the last three years I have had under my care a long series of varicocele cases. My only excuse for adding to an already large literature is that I have been able to obtain more satisfactory results by the method about to be described than by any other.

Nearly all the operations that have been devised involve a twofold procedure: first, a removal of most of the varicose veins; and secondly, a correction of the testicular ptosis by some form of suspension or support. Of these two steps there is no doubt that the second is the more important. One has only to consider how perfectly the symptoms (other than psychic) of varicocele are relieved by a properly fitted suspensory in order to realise the efficacy of support alone. The "conservative" operation of Del Valle omits vein-resection altogether. My view is that the removal of veins is never necessary for the relief of physical symptoms provided the testicle be adequately suspended. With large varicoceles it may be advisable for cosmetic reasons, particularly if psychic symptoms are prominent, or if the patient wishes to pass into one of the public services. Even in such cases correction of the orchidoptosis alone will bring about a considerable diminution in the size of the varicocele. If one depends primarily upon the resection of veins to effect a cure, then one must steer a narrow and difficult course between the Scylla of removing too little, and the Charybdis of taking away too much. In the first case relief will be incomplete or temporary only, while in the second circulatory disturbances in the testicle, of greater or less severity, inevitably follow.

## Methods of Suspending the Testicle.

Numerous methods of suspending and supporting the testicle have been described. They may be grouped under five headings: (1) Suspension by resecting or otherwise shortening the pampiniform plexus. Some of these techniques exhibit considerable ingenuity. For example, Del Valle's operation (already referred to) causes the veins to pass over a bridge of tissue formed from the external oblique aponeurosis. (2) Suspension by raising a flap of tunica vaginalis and suturing it to the external inguinal ring (Parona's operation). (3) Suspension by raising a flap of external oblique aponeurosis and suturing it to the gubernaculum testis (Frank's operation). (4) Support by partial resection of the scrotum. (5) Suspension by shortening the cremaster.

(Continued from preceding page.)

References.—1. Denéchau: Plaies de la Plèvre et du Poumon, par R. Grégoire et A. Courcoux, Masson et Cie., 1917, p. 184. 2. Fortescue-Brickdale: Gunshot Wounds of the Chest, Quar. Jour. Med., vol. ii., No. 43, April, 1918. 3. Robineau: Plaies de la Plèvre et du Poumon, Grégoire et Courcoux, Masson et Cie., 1917, p. 189. 4. Malespine, E.: Les Séquelles des Plaies de Guerre du Poumon, Lyon, 1917. 5. Sargent, E.: La Tuberculose chez les Soldats à la suite des traumatismes du Thorax, Jour. de Méd. et de Chir. Pratiques, July 25th, 1916. 6. Soltan and Alexander: On Gunshot Wounds of the Chest, as seen at a Base Hospital in France, Quar. Jour. Med., vol. x., No. 40, July, 1917. 7. Martin, A.: L'Examen histochimique des crachats dans les vieilles blessures du Thorax, Nancy (Thesis), December, 1916. 8. Elliott and Henry: The Morbid Anatomy of Wounds of the Thorax, Jour. R.A.M.C., vol. xxvii., No. 5, p. 525. 9. Hale White: THE LANCET, 1915, vol. ii., p. 1233. 10. Sargent, E.: Soc. méd. des Hôpitaux June 18th, 1915. 11. Sargent, E.: Troubles fonctionnels cardio-pulmonaires imputables à la lésion du plexus cardiaque et des nerfs du médiastin chez les blessés de poitrine, Acad. de Méd., June 12 h., 1918. 12. Phocas: Soc. Chir., Feb. 10th, 1915. 13. Piery: Mort subite par accident nerveux d'origine pleurale, Lyon Médicale, April, 1917. 14. Leriche: Bull. Soc. Chir., 1914, p. 324. 15. Moynihan, Sir Berkeley: Discussion on Gunshot Wounds of the Chest, Brit. Med. Assoc., April, 1919. 16. Elliott, T. R.: Some Statistical Results of Treatment of Chest Wounds, THE LANCET, Sept. 8th, 1917.

It appears to me that in most cases valid objections attach to all except the last of these methods. The natural support of the testicle is not the scrotum, or the venous plexus of the cord, or any other structure except the tube of cremasteric muscle and fascia. As a general rule, natural means are preferable to artificial, provided that we can accomplish our purpose by them. Moreover, methods (2), (3), and (4) are unnecessarily elaborate for the ordinary case, while the first method is likely to be inefficient. Veins, and especially varicose veins, are almost the last structures that one should select to bear strain and tension.

The general idea of shortening the cremaster for varicocele is by no means new. Mori described such a method in 1907 and Carta in the year following. Mr. Philip Turner<sup>1</sup> gives his technique, which consists in making a longitudinal incision through cremaster to gain access to the veins, and then, after vein-resection, sewing it up transversely. This method does admirably for cases where the testicular ptosis is slight, but in more severe cases does not give sufficient shortening.

It sometimes happens with large varicoceles of long standing that the cremaster is thinned and its muscular elements are atrophied. In such patients I believe that Parona's operation gives the best results. In the majority of cases, however, a muscular cremaster is found which is quite capable, after being shortened, of fulfilling its proper function.

## The Author's Operation.

The operation which I ordinarily use is done as follows: An incision about  $1\frac{1}{2}$  inches long is made over the cord just below the external inguinal ring, and is deepened until the external spermatic (intercolumnar) fascia is seen. This is picked up with two pairs of dissecting forceps and nicked between them. It readily lifts up from the underlying cremaster, but there is no advantage in separating the two layers further. The cremaster is next picked up and nicked in a similar manner. The cut edge of the external spermatic fascia and that of the cremaster are now clipped together with a Spencer Wells forceps on each side of the nick, and the incision in these structures is extended longitudinally up and down for an inch or more each way. A little traction by an assistant on the Spencer Wells forceps will enable one easily to slit the cremaster for three inches through a skin incision of half that length. The assistant should now spread the slit open by using the forceps as retractors, while the surgeon, with his finger or a blunt dissector, gently separates the cremasteric tube all around and for a length of at least two inches from the elements of the cord in their investment of internal spermatic (infundibuliform) fascia. This separation is very easily effected except at the back, where a little force or a touch of the scalpel may be necessary. If it is thought desirable to resect veins, it may be done at this stage. I rarely do more than to remove the three or four worst, tying each vein separately with the finest catgut, and making no attempt to bring the ligated ends together. The next step is the shortening of the cremaster. This is accomplished by eight interrupted sutures of fine catgut, introduced longitudinally into the muscle, so that when they are tied the cremaster is puckered. Each suture picks up the muscle at three or more points; the distance between the highest and the lowest of these represents the amount of shortening that is obtained after tying. One should aim to bring the top of the testicle to the level of the root of the penis. The four sutures in the posterior half of the cremasteric tube are introduced from within, the cord being retracted first to one side and then to the other. They should pick up only the muscle, and should lie exactly in the direction of the long axis of the tube (Fig. 1). Unless these precautions are observed, there is some danger of including the genital branch of the genito-crural nerve. If the cremasteric innervation is destroyed, the whole purpose of the operation is defeated. Before these posterior stitches are tied, the edges of the incision in the tube are approximated by the Spencer Wells forceps, and the four anterior sutures are introduced from without, including intercolumnar fascia as well as cremaster (Fig. 2). The incision is now spread open again and the posterior sutures are tied. Next, one removes the forceps and ties the anterior stitches. An additional external stitch may be inserted directly over

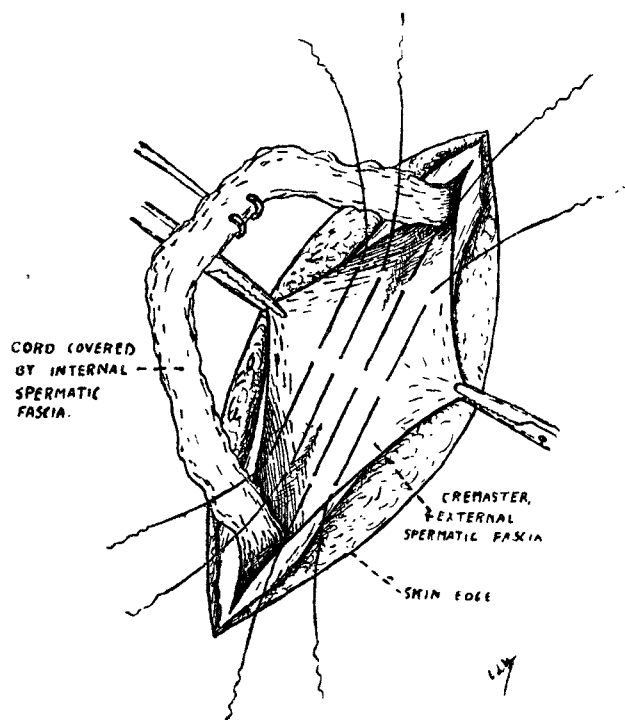
<sup>1</sup> THE LANCET, 1917, i., 759.

the cremasteric incision. A little care in infolding the puckered area will enable one to avoid a "bunchy" appearance and to leave a smooth surface (Fig. 3). Suture of the skin in the ordinary way completes the operation.

#### *Advantages of the Operation.*

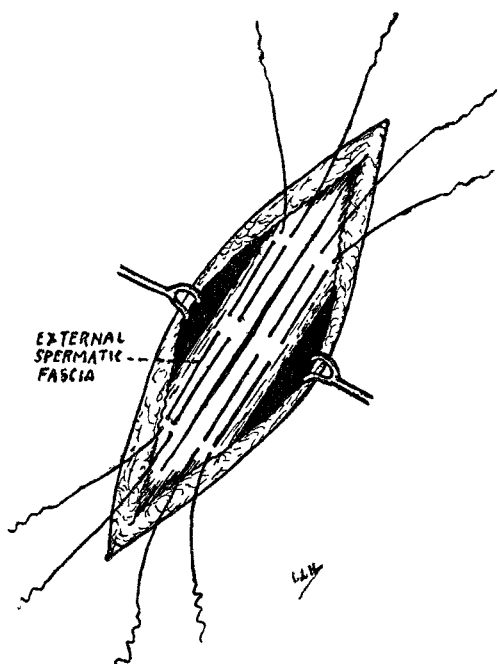
The advantages claimed for this operation are the following: 1. It can be as easily and quickly done as the common operation for varicocele. 2. It is based on a sound

FIG. 1.



anatomical principle. 3. It gives adequate and permanent suspension to the testicle, which is essential to a radical cure of the condition. I have had the opportunity of examining some of my patients after several months of active military service subsequent to the operation. In no case had any degree of the old ptosis returned, and all were free from symptoms. 4. There is little or none of that

FIG. 2.



plastic inflammatory thickening at the point of operation which so commonly occurs in cases done by the old method. 5. The mobility of the testicle is not restricted by the formation of adhesions at this point. 6. The operation is not followed by congestion of the testicle or any other form of circulatory disturbance. Convalescence is rapid; the patient gets up in a week, and permanently discards his suspensory in a fortnight.

#### *Preliminary Hypodermic Medication.*

The radical cure of varicocele can be done very satisfactorily under novocaine anaesthesia. It is my custom to precede all local anaesthetic operations with two doses of morphine and scopolamine. The object of this hypodermic medication is no sense to combat pain or to gloss over an insufficient local technique, but simply to produce in the patient a calm and easy mental attitude rather than that state of worry and tension which may make even a painless operation an acutely unpleasant experience. The size of the doses must be regulated for the individual case, according to (1) the age and weight of the patient; (2) the magnitude of the proposed operation; and (3) the patient's temperament. The second dose can often be most nicely estimated after carefully observing the effect of the first. For an average varicocele case the following would be a suitable dosage:—

Morphine, gr. $\frac{1}{4}$ ...	Scopolamine, gr. $\frac{1}{150}$ ...	} Two hours before operation.
Morphine, gr. $\frac{1}{8}$ ...	Scopolamine, gr. $\frac{1}{200}$ ...	
		} One hour before operation.

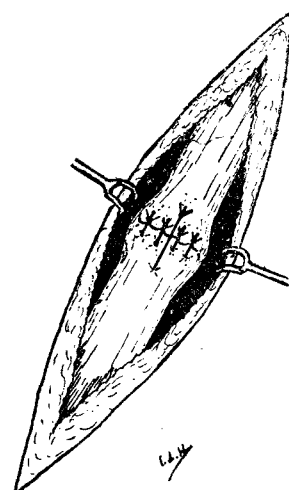
It is desirable to have screens around the bed from the time of the first injection, and to forbid all talking and unnecessary noise in the theatre while the operation is in progress. Questions such as "Does it hurt?" and "Do you feel that?" do no good, and are likely to act unfavourably by suggestion. Scopolamine produces a dry mouth, and patients are sometimes distinctly uncomfortable from this cause; in such cases water may be given.

#### *Technique of Novocaine Anaesthesia.*

The novocaine technique consists of two injections, of which the first is done as follows: The cord should be picked up through the skin with the left thumb and forefinger at its point of exit from the external ring. A drop of novocaine is injected into the skin over the cord as high up as possible. Before this is done the patient should be warned that he is about to feel a sharp "pin-prick." Next, a fine needle, about  $1\frac{1}{2}$  inches long, should be passed, detached from its syringe, through the anaesthetised point into the centre of the cord. There is no danger of wounding the vas, as it readily rolls away from the point of the needle. If a vein should be punctured (this does not often happen) the appearance of blood at once makes it evident. Four cubic centimetres of a 2 per cent. solution of novocaine are now gently injected into the cord. A larger amount is not necessary, and may produce sufficient oedema to interfere with the neatness of the operation. In about five minutes a conductive anaesthesia of the scrotal contents on the injected side will have developed. In the meantime one makes the second injection—an ordinary infiltration of the skin along the line of incision with the same solution, starting at the point through which the first injection was made. This method of anaesthesia is suitable also for orchidectomy, epididymotomy, the radical cure of hydrocele, and other intrascrotal operations.

I wish to express my thanks for the accompanying drawings to Lieutenant C. Langton Hewer, R.A.M.C. (S.R.), formerly my anaesthetist at the Military Hospital, Woking.

FIG. 3.



CLERICAL, MEDICAL, AND GENERAL LIFE ASSURANCE SOCIETY.—The annual report of this society for the year ending June 30th, 1919, records a satisfactory year of working. The new life business exceeded anything in the past 95 years of the existence of the society, and the total premium income was £496,697, an increase of over £20,000. Claims by death, including £29,542 directly due to the war, amounted to £367,586 in all. The expenses of management, after allowing for the cost of annuity business, represented £14 5s. 8d. per cent. of the premium income, as compared with £12 18s. 7d. per cent. in the previous year.