during operations on man. My method is also easier than that of Jonnesco, in which the excision of the stellate ganglion requires expert skill.

Such are the arguments in favour of my method. The probability that it will be very effective is indicated by the improvement obtained by Hofer's operation, which divides the depressor nerve, and the results of my earlier methods, including cervical sympathectomy and section of the sympathetic and vertebral nerves. In the report of the Nancy Congress (*Presse Méd.*, August, 1925) occurs this note: "Leriche (Strasbourg reports a case of angina pectoris without cardiac lesions but accompanied by slight aortic dilatation, which has remained cured for five months thus far, by removal, after the principles stated by Daniélopou, of the left cervical sympathetic chain, from the upper cervical to the stellate ganglion, which was left intact. The last three cervical communicating branches and the two roots of the vertebral nerve were also divided. The result is excellent." Jacobovici also obtained a good result in one case by applying my method. The earlier operations in which my method was used were thus very encouraging. As to the question of danger, all the clinical and physiological facts permit me to state that the nerve interferences are harmless. The fatal results after the Jonnesco operation are due to acute myocardial insufficiency produced by removal of the stellate ganglion, which I leave untouched. The question may be raised whether the operation should be performed bilaterally. I have always believed that operations on the sympathetic should be as conservative as possible. The operation should be completed on the left side, and supplementary operation on the right side performed only if the first treatment proves insufficient.

SUMMARY.

In the Jonnesco method the division of certain nerves, such as the cardiac accelerator fibres, involves danger, while nerves which may be divided usefully and without injury are left untouched. By my method it is the former which are left intact, and many nerves—possibly more than in the Jonnesco operation—which contain sensory cardio-aortic fibres, are severed. In order to judge the value of the Jonnesco operation the cases, which are now sufficiently numerous, should be followed up for several years. It is not prudent to continue this operation, which has been followed by fatal results, before trying a method which appears to be wholly harmless and probably very effective. My operation has its contraindications: it should not be employed if signs of myocardial insufficiency are present. Thus, for example, I do not advise it when anginal attacks are complicated by pulmonary oedema, which indicates the presence of extensive myocardial degeneration. Even so Jonnesco's operation would appear to be much more dangerous than mine in these cases. The number of methods which I advise may seem surprising, but the methods are successive, each one perfecting a preceding one. Some proved excellent from the first, but in each new operation division of more sensory cardio-aortic fibres has been attempted in order to make the benefit more complete. The operation should, however, be as complete as possible in each case, resection of the cervical sympathetic being supplemented by section of the vertebral nerve and the communicating branches mentioned, and of certain branches of the vagus, in so far as anatomical peculiarities or technical difficulties allow. Cervical sympathectomy alone is sometimes very effective, but even this may sometimes be impossible because of the general condition of the patient. In such cases treatment should include simple section of the cervical sympathetic bundle, with or without section of the vertebral nerve, intrathoracic branches of the vagus, and the communicating rami. The number of sensory cardio-aortic fibres will be reduced and the pressor reflex, which is the primary cause of the anginal attacks, will be diminished. When clinical improvement has started the operation may be completed at a later date.

In addition to the classical angina pectoris, surgical treatment may be considered in abdominal angina. Some of these cases are only angina pectoris with an unusual pain distribution, and may be relieved by the surgical treatment applicable to ordinary angina pectoris; in other

cases, however, a real abdominal syndrome exists, due to arteritis or atheroma in the abdominal aorta, the coeliac trunk, or the gastro-intestinal arteries. Here the syndrome is referable chiefly to sensory fibres supplying the abdominal viscera. To prevent the attacks in such cases the solar plexus must be treated.

The practical conclusion appears that surgical treatment of angina pectoris is of general application. Cases must be well selected, and the completeness of the operation will depend upon the patient's condition. I cannot, therefore, agree with Mackenzie, who has stated that anginal patients should never be treated surgically. The Jonnesco method involving the removal of the stellate ganglion may perhaps be abandoned, but the method I suggest is far more hopeful, and offers much promise in practice.

NOTE.—While this article was in the press there appeared Fontaine's thesis, *Traitement chirurgical de l'angine de poitrine* (édition universitaire de Strasbourg). In this thesis, inspired by Professor Leriche, Fontaine has collected 100 instances of angina pectoris treated surgically, and reaches the following conclusions. He agrees with me in condemning Jonnesco's operation, which leads to acute cardiac failure with death, owing to the removal of the stellate ganglia. Fontaine cites numerous fatal cases, and a note by Leriche on a case in which excision of the stellate ganglia for paroxysmal tachycardia provoked acute asystole. An additional reason for abandoning Jonnesco's operation is, according to Fontaine, that the methods in which the stellate ganglia are not touched have proved so much more effective.

A CASE OF ABDOMINAL TORSION OF THE OMENTUM.

BY

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In the introduction to his paper on abdominal torsion of the omentum Mr. Ernest Cowell¹ writes:

"Abdominal torsion of the great omentum, unaccompanied by complications arising from, or factors associated with, any form of hernia, is a rare condition. A search of the literature from 1882 to the end of 1924 has revealed only eighteen recorded cases, including a new case met with in the surgical practice of the author. In view of the fact that few surgeons publish isolated cases, especially in this country, it is hard to believe the condition is really as rare as one might otherwise suppose. Of the 18 cases, 8 are reported from America, 3 from Germany, 2 from Austria, 2 from France, 1 from Australia, and 2 from England. Torsion of the great omentum associated with hernia is not uncommon. Considerably over a hundred papers have been published on this subject, and approximately 140 cases described."

Since meeting with the case here reported I have heard of no fewer than three apparently similar cases, none of which, so far as I am aware, has as yet been published. The condition, therefore, as Cowell suggests, is probably not as rare as would appear from the scanty literature.

A man, aged 63, was admitted to Dundee Royal Infirmary on November 23rd, 1925, complaining of pain in the right side of the abdomen of four days' duration. Since boyhood he had worked as a colour mixer in linoleum works—lead colours being used. The pain came on gradually, steadily became worse, and was aggravated by coughing or taking a deep breath. There was no vomiting, and the bowels, always regular, had moved daily since the onset. He was of average build, and rather thin. General condition good. He complained of pain in the right iliac fossa. Temperature 97.2°, pulse 72. Abdomen slightly distended; no respiratory movement in lower half. Liver dullness normal; flanks clear. Resistance all over the abdomen with "boarding" on the right side extending from the right iliac fossa almost to the costal margin. There was definite acute tenderness over the area of "boarding." No palpable swelling, and no hernia. Rectal examination negative. Leucocyte count, 15,200 per c.mm. Tongue dry, and slightly furred. Lower teeth carious with advanced pyorrhoëa. A pre-operative diagnosis of appendicitis was made,

although it was recognized that the clinical features were not altogether indicative of that condition.

Operation.

The abdomen was opened by a right paramedian incision, the rectus muscle being displaced outwards. The appendix was normal. A dark red mass, measuring $3\frac{1}{2}$ by $1\frac{1}{2}$ inches, was found adhering by its lower extremity to the middle of the ascending colon. This was easily separated, and proved to be an isolated (or accessory) portion of omentum attached by a twisted pedicle directly to the transverse colon, and well to the right of the main organ. It was found impossible to untwist the pedicle owing to an elastic recoil which at once reproduced the original torsion, thus demonstrating that the anchoring of the mass by its lower end to the ascending colon was not essential to maintain the torsion. The twist, of two complete turns, commenced about half an inch distal to the colic attachment, so that it was a simple matter to ligature the pedicle close to the transverse colon and remove the mass. Appendicectomy was performed, and the abdomen closed. The patient made an uneventful recovery, and was discharged on December 8th.

In the eighteen cases collected by Cowell the ages ranged from 14 to 55; this case is therefore the oldest on record.

In considering such an apparently rare condition as abdominal torsion of the great omentum one wonders whether any (or many) such cases have been missed through the use of a gridiron incision to open the abdomen.

For the accompanying illustration my thanks are due to Dr. W. O. Reid, Dundee.

REFERENCE

¹ *British Journal of Surgery*, 1925, vol. 12, No. 48, p. 738.

A METHOD OF ESTIMATING THE SIZE OF AN ENLARGED PROSTATE.

BY

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It is always difficult to estimate the size of an enlarged prostate, and the usual method of recording this by comparison with the size of a tennis ball, apple, or other object is unsatisfactory. To note that the prostate is enlarged to the size of a large apple does not help one at a subsequent examination, and if the case is referred to another surgeon this note is of no value, depending as it does on the personal opinion of the first examiner, whose idea of a large apple may differ from that of the next person to examine the patient. In order to make some sort of accurate measurement I have been using the following device, which, if not scientifically exact, at least gives definite figures which can be checked at any future examination.

The three measurements I wish to obtain are: (1) the width—that is, the distance from side to side; (2) the vertical—the distance between the upper and lower edges;

(3) the thickness—that is, the distance between the floor of the prostatic urethra and the rectal wall.

To measure the width of the gland I use a metal probe 30 cm. long. The patient bends over a couch; the left forefinger is passed into the rectum and maps out the prostate, noting any hardness, inequality, or tenderness. The probe is then introduced along the palmar surface of the finger, and carried

FIG. 1.

by the finger to the left lateral limit of the gland, as represented by the line b—c (Fig. 1). An assistant holds a sheet of cardboard resting against the back of the patient's thighs, and marks with a pencil the position of the end of the probe (c). The finger then moves the probe across the gland to the right lateral limit of the swelling, and the new position of the end of the probe is marked on the cardboard (d—e). With the nail of my right forefinger I mark the point where the probe enters

the anus, and withdraw the probe. Laying the probe on the cardboard, and measuring the distance between the points e and c, I can obtain the distance between the points b and d, which I record as the width of the prostate.

To measure the vertical length a piece of drainage tube 20 cm. long is slipped over the probe and pushed up to the point (Fig. 2). The left forefinger is passed into the rectum, and the probe with its rubber cover introduced along the palmar surface, and pushed up until the finger reaches the upper limit of the gland. Keeping the probe in this position, the rubber cover is gently pulled down by the right hand until the lower margin of the gland is reached. The rubber and probe are then pinched together and removed. The uncovered end of the probe is measured, and this gives the vertical length of the gland.

FIG. 2.

To measure the distance between the floor of the prostatic urethra and the rectal wall I use a rigid rubber-covered probe (Fig. 3, A) soldered at right angles to a 10 cm. rule (B). A brass block (C) 2 cm. square and 4 cm. long is slotted to slide along the rule, and is drilled at the upper end to form a sleeve fit for a catheter (X). A circular window (Y) is drilled in the centre of the block to serve as a window through which the scale can be read.

FIG. 3.

The catheter is passed gently into the bladder until urine flows. The rectal tube is passed into the rectum and pressed against the prostate. An assistant then very gently slips the end of the catheter into the hole in the brass block and slides the block backward towards the rectal probe until the tissues prevent further movement. As the catheter and probe are rigid and parallel the thickness of the gland is shown by the point on the scale that is seen through the window. An x-ray photograph taken with the patient lying on his side with the instrument in position showed the lines of the rectal probe and catheter to be quite parallel.

The three measurements are recorded in my notes. I take some dental wax and mould it into the shape given by the measurements, adding any irregularity or abnormality discovered by the examining finger. The model is labelled with the patient's name, and serves as a record of the examination.

While not suggesting that this method is ideal, I may claim that it is painless and gives some fixed figures to record.

OPERATIVE TREATMENT OF ACUTE PERFORATED ULCER OF THE STOMACH AND DUODENUM:

OBSERVATIONS ON SIXTY-SEVEN CASES.

BY

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It is generally admitted that duodenal ulcer, like appendicitis, is markedly on the increase, and that the complication of perforation is now common. In patients suffering from duodenal or gastric ulcer perforation is said to occur in 23 per cent. of male patients and in 9 per cent. of female.¹ Spontaneous recovery occurs only occasionally; I have seen only one such case, upon whom it was necessary, some months later, to operate for pelvic abscess and a recrudescence of the symptoms of ulcer. Perforation is often a "seasonal" complication: it occurs with greater frequency during the