replied by citing a cretin who was an artist of some repute at Zürich in the eighteenth century. But possibly he was really only an achondroplastic. Crichton-Miller has returned to his point, and has asked for cases of subthyroidic creators—be it of works of art or of children. It is of course true that a subthyroidic woman may have children after she has had thyroid treatment. He further maintains that child-bearing and artistic creation are mutually exclusive, the storehouse of creative energy being unable to cope with both kinds of creation. And I think that, though we find apparent exceptions to this rule, it is very rare for both kinds of creation to be simultaneously possible.

Hyperthyroidism.—Crile says: "I have never known a case of Graves's disease to be caused by success or happiness alone, or by hard physical labour unattended by psychic strain, or to be the result of energy voluntarily discharged." Sufferers from this condition are always irritable, and tend to be explosive. Thoroughly unreasonable, they regard themselves as the only righteous persons in a wicked and froward world. "O cursed spite, that ever I was born to set it right," is the burden of their lament. We have been reminded that Shelley had a hyperthyroid face. He certainly represented the hyperthyroidic temperament at its best. Of his creative genius there is no doubt, but in practical matters he beat his wings ineffectually against the bars of his cage. Indeed, his friend Hogg compared him with an albatross—magnificent in flight, but merely grotesque in captivity.

The sufferer from hyperthyroidism always experiences difficulty with her environment, which not only makes her "gey ill to live with," but which may precipitate her into actual insanity, with suicidal tendencies. The thyroid gland is apt to enlarge in nerve storms, while in the manic-depressive psychoses I have seen the excited phase accompanied by signs of an overactive thyroid, to be replaced by signs of underaction as the phase of depression comes on.

I am more and more impressed with the influence of emotion in the causation of Graves's disease, which is readily comprehensible in view of the sympathetic innervation of the thyroid gland. This is particularly likely to happen if the distressing emotion has a matrimonial origin, while it often adds considerably to the difficulty in detecting the cause, as this is not usually a matter of advertisement. Fear is another emotion which has a marked effect in exciting hyperthyroidism, as was well shown during the air raids on London. Russell Brain has recently shown that exophthalmos is due to an affection of the upper part of the mid-brain, and that no hard-and-fast line can be drawn between the exophthalmos of Graves's disease and that of a central nervous lesion. This adds one more link to the connexion between the emotional nervous system and the endocrines.

PSYCHONEUROSES AND THE PITUITARY

It is curious that many of the psychological accompaniments of pituitary disease are the same whether associated with excess or with defect of pituitary activity. In fact, usually we can only speak of the psychological effects of *dyspituitarism*. It is true that a well-developed anterior lobe is often associated with an imaginative force, which can be controlled and brought to the service of an active brain; the fortunate possessor is also often musical and, in short, a practical visionary. It is also true that sufferers from a minor degree of hypopituitarism compensate for it by persistent conscientious effort, often in excess of their physical strength. But both the pituitary giant and the Fröhlich tend to lack inhibitions. They may lie, steal, and commit offences in a foolish, pointless way; often it would seem, merely to attract attention. They try to compensate for their feeling of inferiority by a craving

for the limelight, and if they cannot achieve this with their social equals they seek for it from their social inferiors. They are very prone to fantasy-thinking, seeking a dream world in which to escape from this feeling of inferiority. In two of my recent cases (one in a girl of 17), the craving for a child led to fantasies of pregnancy. Another girl stole a gold watch from a schoolfellow, and on her return home for the holidays told her mother it had been given her as a prize for good conduct!

It has been pointed out to me that these symptoms are not uncommon in psychoneurotics without pituitary disease. From the close association between the glandular and nervous structures in this particular region it does not surprise me that pituitary disease should excite such typical reactions.

PSYCHONEUROSES AND THE ADRENALS

The adrenal medulla, from its activating effect on the sympathetic, is a fighting gland. And as the adrenal cortex tends to virilism, the owner of a well-developed pair of adrenals is a pugnacious and masculine type, with plenty of drive, not to say aggression. If the adrenals are defective, we see a weakening of all these characteristics, with a tendency for the vagus to get the upper hand, which may precipitate such things as asthma. If the adrenals are overactive, we find a liability to anxiety neurosis, and to phobias of all kinds. In such an individual the dominant emotion is *fear*.

I have recorded an extraordinary case in which a woman became terror-stricken, deploring a mysterious calamity which had fallen upon her. At last she confided to me that she felt as if she were turning into a man. This led me to look for an adrenal tumour, which was found and removed. Her case is of especial interest because the psychological changes were recognizable before the physical. Her terror I refer to the concomitant irritation of the adrenal medulla by the tumour.

These are but a few examples from a field of great interest, which offers opportunities for further research. For, as Pottenger says, "Between the vegetative and psychical systems a vicious circle is established, and each harmful stimulus in the one influences the other. Every disease-process of a serious nature, therefore, must have a psychical side to it."

BLADDER HEALING AFTER SUPRAPUBIC CYSTOTOMY ESPECIALLY IN PROSTATECTOMY*

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In spite of many methods and fancies, the post-operative healing of bladder wounds remains unsatisfactory, as is shown by the slow recovery from sepsis and the formation of sloughs, for whose separation much time may be required. As the only particular in which the suprapubic wound differs from any other surgical wound is contamination with urine, and as I hold that to overcome this is the key to improvement, may I inflict on you some personal views, believing that they present advantages sufficient to justify me in bringing them to your notice?

I propose to consider (a) the methods of wound treatment which are responsible for this soakage, (b) the results of urinary extravasation, and (c) to suggest improved methods. As the bladder is more frequently opened for transvesical prostatectomy than for other

* Based on a paper read before the Manchester Surgical Society in opening a discussion on the technique of prostatectomy.

purposes, and as this operation makes greater demands on the skill of the surgeon during the post-operative period than most other intravesical procedures, I shall discuss the matter with prostatectomy in mind, asking you to remember that the principles enunciated are equally applicable to suprapubic cystotomies for other purposes.

WOUND TREATMENT AND WOUND SOAKAGE

In discussing drainage I shall not consider immediate bladder closure, which is practised by a few surgeons, but of which I have little experience. Most operators employ a suprapubic drainage tube, and in what follows the use of a tube is understood.

Three methods for collecting urine from the suprapubic region hold the field in this country. The first consists in the application of large dressings, into which the patient's urine soaks—a more uncomfortable, unsurgical, and septic practice can scarcely be imagined; surely there is no comparable disgrace in modern surgery! Not infrequently these unfortunates lie in the extremity of discomfort on a cold, urine-soaked bed, which aids and abets the development of pulmonary complications. In the second method a Hamilton Irving dish is placed on the wound at the end of the operation, or on the return of the patient to the ward, and the urine drains into a receiver placed between his thighs. By some surgeons a bag containing boric acid crystals is introduced into the cup, so that the crystals may dissolve in the urine to keep it acid and to inhibit the growth of organisms. In criticism of this practice I would say that boric acid is a feeble antiseptic and a weak acid, and that its presence further increases the hypertonicity of the urine, with results which I shall discuss shortly. Moreover, the drainage of a Hamilton Irving dish is imperfect, as the outlet tubes cannot at present be made to emerge from the lowest point of the apparatus; thus there is always retained a quantity of urine, which lies on the abdominal wall and in the wound, and keeps them both sodden. In the third method a tube placed in the bladder is joined by a connecting tube to the receiver at the bedside. Of these three the second is the least objectionable and the most popular, but all have a fundamental fault in that they receive only such urine as has reached the surface of the abdomen, instead of going in search of it to the depths of the wound.

DIFFICULTIES OF BLADDER DRAINAGE

When a vesical wound is sutured we speak of "closing it around a tube"—that is to say, we place a tube in one portion and draw together the remainder of the wound by interrupted stitches. In the generous opening which is nowadays customary a considerable number of sutures may be required. We then practise self-deception in believing that this suture line is watertight, and that the only outlet for bladder contents is the tube. This credulity requires correction. It probably springs from a comparison with the conditions obtaining in the surgery of the gastro-intestinal tract. But the two cases are not comparable. The urologist is denied that supreme boon vouchsafed to the abdominal surgeon—the peritoneum. The peritoneum makes all the difference. Its two applied surfaces have wonderful and prompt adhesive properties, which greatly flatter the abdominal surgeon's needlework. The external coats of the bladder, on the other hand, have but inferior powers of adhesion, and watertightness must perforce await the tardy onset of true healing.

The drainage of the bladder suffers another severe disadvantage in that it takes place against gravity. Urine, therefore, passing into the bladder from the kidneys rises in that cavity until it encounters the suture line, and promptly passes through into the perivesical spaces. Soon the level of the fluid outside the bladder approxi-

mates to that within, and the two together rise until the abdominal parietes are reached, when they overflow on to the surface, to be received into the Hamilton Irving dish or other device. The fundamental fault is the saturation of the extravascular structures in urine before any of it arrives on the surface of the abdomen. The damage is done before the usually applied external contrivances come into action. The tube itself carries away only a small proportion of the urine, and the water levels within and without it are the same. If the wound is exposed and carefully watched, urine can be seen to well up through it. The main function of the tube is to provide an egress for blood clots.

The cellular spaces around the bladder are extensive: in addition to those wide areas in front and at the sides which are evident at operation, they pass backwards as far as the rectum and sacrum, and communicate freely above with the whole of the retroperitoneal cellular system. They are, moreover, very vulnerable, and are sites from which toxic material can be freely absorbed into the system. To safeguard them from contamination appears fundamental, yet the extreme importance of so doing has not as yet been fully appreciated, or perhaps a way of so doing has not been popularized. I would ask any surgeon who uses these external methods of diverting the urine, and who has had the misfortune to lose a patient, to open up the perivesical tissues and examine their state. The condition is an actual extravasation of urine, with all its attendant dangers.

RESULTS OF URINARY EXTRAVASATION

1. Healthy uninfected urine introduced into the body is an intensely irritating fluid, capable by itself of producing severe injury, and even tissue death. The causes of this irritation are probably numerous and not completely understood, but the following may be mentioned. It is a supersaturated (and therefore intensely hypertonic) solution. Its constituents do not exist in simple solution, but are held in adsorption on the urinary colloids, enabling the urine to contain enormous volumes of salts. As an example it may be mentioned that urine holds in solution three or four times as much oxalic acid, and fifteen or more times as much uric acid, as can be dissolved in plain water. In itself this supersaturation is injurious to infiltrated tissues. Furthermore, the urine contains traces of pepsin (Troller¹) and trypsin (Bendersky²), each possessing digestive, and therefore destructive, powers.

2. The urine, however, in many or most instances, is infected when it escapes from the bladder, as a result of antecedent urinary troubles or their treatment. In any case, it does not long remain sterile in a suprapubic wound. The effects of a perivesical suppuration are thus superadded. Urinary extravasation seen in the perineum is a familiar clinical picture, the mention of which calls up visions of oedema, emphysema, and gangrene, with severe toxæmia. In what respect does the suprapubic condition differ from this, save probably that, in the latter, virulent anaerobic organisms play a small part, and that the cellulitis is hidden from view by the abdominal parietes?

3. When sepsis has occurred the presence of urea-splitting organisms adds fresh chemical irritants (ammonia, etc.) to those already enumerated.

4. A certain amount of this urine is presumably reabsorbed into the circulation. In prostatic disease recovery depends largely on the renal function, already much damaged in most cases by back pressure, sepsis, old age, and the like. Such damaged organs are already working to full capacity, and have no margin to cope with reabsorbed urinary extravasations. Healthy urine introduced into the blood stream is well known to be toxic. A rabbit weighing 1 kilogram dies after the injection of

60 c.cm. of human urine into its circulation—a "urotoxy" (Bouchard³).

5. A severe inflammatory focus has far-reaching effects on the damaged organs of an old man. By producing changes, perhaps slight—a toxæmia, a cloudy swelling in elderly heart muscle, liver, or kidney parenchyma—it delivers the *coup de grâce*. I believe that many prostatics die from extravasation of urine, and that their deaths are variously attributed to uræmia, cardiac failure, and the like, this being the mode of dying rather than the cause of death.

6. The later effects are delayed healing due to sepsis and necrosis in and below the abdominal parietes. Continued decomposition of urine leads to a resistant alkaline cystitis, deposition of phosphates in the wound, possibly subsequent extension of suppuration to other parts of the urinary tract, and later to the formation of phosphatic calculi. These complications, though important, do not call for a fuller discussion.

SUGGESTIONS FOR PREVENTION

All these post-operative misfortunes are the direct or indirect results of the escape of urine through the suture lines into cellular tissues. If there were no urine the bladder and the suprapubic incision would heal just as favourably as do other wounds. If the urine from the very start could be kept below the suture line there would be no delay in healing, save such as is dependent on the temporary presence of a tube. A dry wound is the prime necessity of prostatic surgery.

DRAINAGE BY SUCTION

In my practice the wound is kept dry by suction. To facilitate this the patient is nursed with the wound exposed, for suction apparatus cannot be efficiently attended to under bedclothes. Blankets are placed above on the chest and upper abdomen, and below as high as the pubis, and are in turn excluded by sterile towels and batiste. The dressings which were temporarily applied for transport from the theatre are removed, and a thick layer of bismuth-paraffin paste is applied around the operation area. Sterile wool is placed laterally to a point level with the anterior superior spines. A square of skin about 6 × 6 inches is thus exposed between the umbilicus and pubis. A loop of bandage applied to the wrist may be necessary to restrict the movements of the hands, so that they cannot reach the wound or towels.

In the nursing home a small electric pump produces suction, but in the hospital I have had a water-pump fitted in a linen room, which distributes one branch to the male general ward and one to a side ward. Between the patient and the pump is inserted, (a) a valve to preclude any possibility of back flow from the water system towards the patient, and (b) a Woulfe's bottle, which acts as a reservoir for the urine. Other types of pump may be used, including a simple hand pump mounted on a stand.* The Sprengel pump sometimes used in the past gives inferior suction, and should be replaced by the types described. An angled glass tube is fitted at the patient's

end of the pump connexion. Periodically the pump is turned on and the tube passed down inside the rubber suprapubic drain, and any contained fluid is thus withdrawn (Fig. 1). The quantity is generally small. If the output of urine in twenty-four hours be 50 ounces the hourly output will be approximately 2 ounces. If the suction is used each quarter of an hour, only half an ounce of urine will be withdrawn. The pump is turned on, the glass tube is dipped once or twice within the rubber one, and withdrawn in about five seconds, and the pump is turned off again. Ten seconds suffice for the whole manœuvre.

PRECAUTIONS IN TECHNIQUE

In arranging this apparatus care must be taken that negative pressure is not set up within the bladder. There must be an adequate space for air entry along the side of the glass suction tube, otherwise the mucous membrane may be damaged owing to its being dragged into the end of the drain. The vesical limb of the glass tube must be shorter than the rubber drain, so that there will be no chance of its reaching the bladder mucosa. On the other hand, it should not be more than a third of an inch shorter, in order that the maximum quantity may be reached and the fluid level kept low.

ADVANTAGES OF SUCTION DRAINAGE

In the absence of unusual difficulty or of some technical fault, the patient may be nursed from operation to the time of removal of the suprapubic drain without a single drop of urine falling on the abdominal wall. If vomiting or coughing occurs, fluid may be forced up the tube on to the skin, but it is small in amount and can be immediately removed by a touch of the suction pump. It follows that there is no wetting of the bed, no chilling of the patient through lying on a damp bed, and no disturbance from constantly changing draw-sheets. I have frequently seen the original wool placed at the flank of the patient on his

FIG. 1.

return to bed from the theatre clean and dry at the end of thirty-six hours. But, desirable as are the dryness of the skin and bed, and the quietude of the patient, it is of trifling significance as compared with the importance of keeping the connective tissues of the pelvis sweet and free from urine. On this hang the future behaviour of the wound and the satisfactory convalescence. The time immediately after the operation, and the subsequent twenty-four to forty-eight hours, are of supreme importance. No time is lost, therefore, in removing the patient from the theatre and establishing suction. If for the first day or two infiltration can be successfully precluded, the defences of the body will have been mobilized, some shutting off will have occurred, and the danger of perivesical soiling will be materially reduced.

It may be objected that the constant attention paid to the suction is more than can be given by the nursing staff of many institutions. This criticism is not valid. Bladder cases always make heavy nursing, but the time exacted by the manœuvre I have described is more than recovered by the freedom from changing of draw-sheets, while, of

* Obtainable from Griffin and Tatlock, 34, Great Ducie Street, Manchester.

course, there is no comparison in the comfort, restfulness, and progress of the patient. Moreover, if, as I maintain, great advantages arise from this way of treating the post-operative bladder, it would be unjustifiable to withhold this treatment, even at the expense of additional nursing; and, even then, economy would result owing to the abbreviated convalescence. The amount of personal attention required of the surgeon is much reduced.

METHODS OF SUCTION DRAINAGE

It is a time-honoured dictum that bladder drainage should be free. Why? The reasons for bladder drainage are the removal of urine, of blood clot, and possibly of pus. Pus and urine are fluid, and can escape from the bladder by small channels. The only reason for the large tube is to allow the exit of blood clots. Haemostasis is better with the modern operation than previously, and at the end of most prostatectomies there is no bleeding. The size of the drain must be determined by the degree of the haemorrhage. A large tube leaves a gaping orifice on removal, which collapses with difficulty. Unnecessarily large ones should therefore be avoided for average cases, in which there is practically no haemorrhage. After toilet of the bladder I use a piece of tubing of No. 14 size, as this is neither so large as to delay wound closure nor so small as to impede suction down its lumen. The tube may be dispensed with as soon as blood clots have ceased to come away.

How long shall the tube be retained? Freyer said four or five days, and most textbooks repeat his teaching. When the vesical contents are entirely fluid or particulate its usefulness disappears. With the modern operations blood clots rarely trouble, and are almost invariably

and the other on the vesical base. Suction applied to either end will remove urine from the bladder until the level is below that of the catheter eyes. After the urine is removed, negative intravesical pressure is obviated by air passing in at the opposite end and traversing the catheter. Suction should not be persisted in unless the air can be heard entering the inlet tube. The advantage of this apparatus is the small size of the tube, which emerges through the suprapubic opening. This permits almost complete closure, the wound still remaining dry.

Fig. 3 shows an easily constructed device which can be used as an alternative. A cannula* (bore 9 Charrière, length $3\frac{1}{4}$ inches) is driven by means of its trocar through

FIG. 3.

the lateral wall of a piece of No. 7 or No. 8 rubber tubing, and left in position so that one-third of an inch of the rubber tubing overlaps and protects the lowest end of the cannula. The combination is introduced into the suprapubic wound. Suction is applied to the free end of the rubber tube. The metal cannula is important. It forms a safety inlet for air, and the water level is kept down to its tip. This device is easier to use than the

FIG. 2.

absent after the first day. Four or five days is too long, for at the end of that time stiffening has occurred in the wound, which prevents its spontaneous coaptation. My own practice is to remove the tube at the end of thirty-six hours. The sooner the drain is out the more rapidly the wound margins recover their original position and adhere.

These remarks apply not only to the wound in the parietes, but also to that in the bladder. From this point onwards an inlying catheter may be relied upon for drainage, but there are advantages in continuing suction by some tube of lesser bulk for a further few days. Once again it is imperative to safeguard the vesical mucosa from negative pressure, for as soon as fluid is removed from the bladder suction acts in a closed viscus, and may injure its lining. To prevent this an inlet of air should be arranged. Either of the two devices shown in Figs. 2 and 3 may be used. Fig. 2 shows a double-ended catheter with two interruptions similar to those in a Malauet catheter.* It is inserted via the urethra during the operation, and drawn through so that one end emerges from the suprapubic wound. It is so arranged that one of the interruptions lies in the prostatic cavity

FIG. 4.

double-ended catheter, the air inlet to which sometimes gives trouble, though it is very efficient when some experience has been gained. But the second device is recommended for those seeking to prove the methods for the first time. In each the desire to allow the bladder sinus to contract easily, and to the greatest possible degree, regulates the type of the tube. The catheter is rather smaller than the tube.

A third method is to apply suction directly to the inlying catheter, the precaution having been taken of inserting a pressure valve. The valve shown in Fig. 4 is easily constructed. If the rod is dipped into mercury at varying levels the force of the suction available in the bladder can be regulated. When in use the mercury "bubbles" or "boils," and the two diaphragms seen in the figure act as a buffer to prevent its reaching the suction tubes. This valve can be applied between the pump and the Woulfe's bottle, or as a collateral. If desired, it may be used in conjunction with either of the above-described tubes.

Suction of all kinds is dispensed with towards the end of the first week, the inlying catheter being retained. A gauze dressing is placed on the wound, which as a rule

* Obtainable from the Genito-Urinary Manufacturing Co., 8A, Devonshire Street, London, W.1.

* Obtainable from the Genito-Urinary Manufacturing Co., 8A, Devonshire Street, London, W.1.

remains dry. In the subsequent two or three days lotions introduced through the catheter for bladder lavage emerge suprapubically, but even this soon ceases.

OPERATIVE RESULTS

Since I adopted this technique, more than two years ago, my personal results have greatly improved. It is true to say that from no private patient's wound have I removed any slough, however small. The whole wound, with the exception of the tube track, has in every case healed *per primam*, and complete wound dryness has never been delayed beyond a fortnight. The patients leave their beds, as a rule, in about three weeks. Pyuria gives little or no trouble, and there is no difficulty in maintaining an acid and healthy urine. The deposition of phosphates has never been so much as suggested. It is scarcely necessary to add that the personal well-being of the patients is for the most part excellent. Claims but little inferior may also be made for my hospital cases. The methods are quite superior to any I have previously tried, or seen tried, and will, I venture to hope, be given a trial by other members of the profession.

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CYSTIC DILATATION OF THE COMMON BILE DUCT

REPORT OF A CASE WITH UNUSUAL FEATURES

BY

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(With Special Plate)

The comparative rarity of cystic dilatation of the common bile duct, usually referred to as common duct cyst, may be judged from the number of recorded cases. McConnell¹ was able to collect records of only thirty-five cases up to the end of 1917. Ten years later the number was reported by Judd and Greene² to have increased to sixty-four. They state that in 17,381 operations performed on the biliary tract at the Mayo Clinic a common duct cyst was encountered only once. The increasing interest in the condition due to the more frequent writings on the subject during the past few years has resulted in the number being increased to ninety-three in 1930, as reported by Wilson.³

It is only within recent years that it has been diagnosed before operation, the first person to do this being Neugebauer⁴ in 1924. Since then only Taylor⁵ and Iselin⁶ have attained this rare distinction. The case reported below was no exception to the general rule of failure of pre-operative diagnosis, for its clinical features were so unusual that the thought of the possibility of a common duct cyst being present was never even entertained.

CASE HISTORY AND EXAMINATION

J. C., a married woman, aged 43 years, was admitted to the Royal Victoria Infirmary on September 9th, 1931, with the complaint of severe upper abdominal pain. The onset of this pain occurred some six hours before admission. For the next two hours she was able to go about, but the pain then became worse and she went to bed. Two hours later she vomited a small quantity of greenish, bitter material; this gave her a little relief for a while, and then the pain began to increase in severity, and continued to do so up to the time of admission. The pain was "sharp and jabbing" in character, and did not radiate into the back or shoulders.

The bowels had moved normally on the morning of admission before the onset of the pain, but after this there was no further evacuation. Micturition was normal, and not in any way affected by the pain.

Most of the previous history was elicited a few days after the operation, for when seen after admission she was too ill to give any coherent story. She had suffered from "stomach trouble," which she described as biliousness, off and on for years, beginning at the age of about 25. It took the form of mild attacks of epigastric pain coming on two to three hours after food, sometimes persisting until the next meal, the taking of which brought relief; at other times she had nausea, and was relieved by vomiting a small quantity of bilious material. The average duration of one of these attacks was a week, and she had several in a year. She had not observed any relation between these attacks and the ingestion of some particular food. Fatty foods she liked and they agreed with her. Her bowels had always been regular; there was no history of melaena nor had her stools ever been clay-coloured. She had had no trouble with micturition. Her menstrual function was free from any irregularities. Apart from her stomach trouble she had never had any illnesses or accidents in her life. She had never been jaundiced or even sallow, nor—so far as she knew—had she ever had typhoid fever or a pyrexia of unknown origin. She had one child, now 22 years of age, who had always been healthy. No miscarriages or abortions.

On examination she was in great pain, and showed some degree of shock. Pulse 120 beats per minute and of low tension; temperature 97.5°; hands cold; slight cold sweat on forehead; tongue thinly coated with white fur.

The abdomen was somewhat scaphoid in appearance. Immobility of the abdominal wall was present, respiratory movement being entirely thoracic in character. There was a generalized, board-like rigidity, with tenderness in the epigastrium, most marked over the right rectus at a level about midway between the umbilicus and the xiphisternum. No tumour could be felt. On percussion there was no apparent loss or increase of liver dullness, while no dullness was present in either flank. The clinical picture seemed to be that of a clear-cut case of acute perforation of a peptic ulcer, and this diagnosis was accordingly made.

Operation

A mid-line supra-umbilical incision was made. On opening the peritoneal cavity there was no escape of gas. No ulcer was present either in the stomach or in the duodenum, and there was no evidence of peritonitis. It was noticed that the first and second parts of the duodenum and the pyloric part of the stomach were pushed forward, and the proximal half of the transverse colon displaced downwards. The agent responsible for this was a large globular cystic swelling about 12 cm. in diameter. Above it the gall-bladder could be seen lying distended, and normal in size and appearance. The liver showed no sign of disease.

The cyst was covered with peritoneum continuous with the gastro-hepatic omentum and with that covering the duodenum. It extended above to the hilum of the liver, below to the lower end of the second part of the duodenum, to the left nearly as far as the mid-line, and to the right as far as the edge of the liver. The cyst was found to extend posteriorly to the right kidney, but a hand could easily be passed between it and the lower two-thirds of the anterior surface of the kidney. Anteriorly it was pushing the head of the pancreas forwards as well as the duodenum. The foramen of Winslow was not found, and the exact relation of the cyst to the cystic duct could not be defined. The cyst was thought at first to be pancreatic in origin, but on aspiration with a small needle cloudy bile was withdrawn, this making it clear that the condition was one of cystic dilatation of the common duct. Seeing that the bile looked infected, and that the condition of the patient was not good, it was decided to drain the cyst and leave any further operative procedure until a later date. A trocar and cannula was inserted into the anterior wall of the cyst above and to the right of the duodenum. On withdrawal of the trocar about eight ounces of fluid were evacuated. The cannula was then removed, and the hole made by it enlarged sufficiently to admit the index finger. Owing to the large size of the cyst the whole of its