the unaffected one. I can raise it directly forward from me to the same degree that I can the well one. I can rotate it, both outwardly and inwardly, to the degree that I can the unoperated one. I can lie comfortably on that side at night, and I do not find any motions which I naturally desire to make which I cannot make on account of either pain or restriction in motion in the shoulder."

The chemical examination of the contents of this sac has been referred to under the paragraph on pathology. The histological examination of the specimen showed evidence of chronic inflammatory changes only.

CASE IV. Mrs. D. H. S., age, forty-one.

This patient was examined for the first time Oct. 13, 1906. She was complaining of pain in the right shoulder. During the past six years she has suffered more or less constantly from pain localized in the shoulder and radiating down the arm as far as the fingers, but more constantly referred to the insertion of the deltoid, and invariably aggravated by use. Her occupation is that of a cutter. She stands at a table holding in her right hand a heavy pair of shears and cutting material which she holds in her left hand, making a series of simple motions which are constantly repeated. The motion which she thus so habitually makes is one of outward rotation of the arm, combined with forward flexion of it. Up to very recently a little rest has been sufficient to relieve the discomfort which constant use has frequently brought on. Of late, however, the pain has become intolerable, and rest has afforded her no relief. She has lost a great deal of sleep and this has told upon her constitution. For the two weeks previous to examination she had been unable to do her work at all.

On examination, the motion of the shoulder, both active and passive, were quite free, but were accompanied by a great deal of discomfort, particularly on making the motions to which I have just referred. There was a slight degree of atrophy of the deltoid. In the region of the bursa was a distinct prominence about the size of a nickel. This was palpable as well as visible. On palpation there was a marked induration extending from this central elevated portion to a considerable extent on all sides. This was very tender to pressure and there seemed to be a slight increase in the surface temperature. Counter irritation with ichthyol and fixation together with prolonged cessation from her habitual occupation was advised and was tried for a short time, but the patient soon consented to surgical interference.

On Oct. 20, 1906, an incision about 5 cm. long was made over the point of the right shoulder in a manner similar to that which has already been described. The anterior portion of the bursa seemed to present no pathological change. In about the middle of the sac, however, an adhesive inflammation had taken place and the portion which was posterior to a point where this inflammation was first noted contained a cheesy material of an exactly similar appearance to that noted in Case III. This seemed to be made up of calcareous granules, some of which were embedded in the lining membrane of the sac. This was thoroughly dissected out and curetted, and the entire cavity sopped with tincture of iodine. The muscles and skin were closed and the dressing was applied as in the previous cases. The stitch was removed on the fifth day after the operation and passive motions were found to be possible through an arc of about one third of the normal.

On Nov. 19, motions of the arm were fully restored and there was no pain attending manipulation of the joint.

Dec. 24, 1906. Patient has been at work at her

previous occupation for nearly a month, suffers no discomfort, and has absolutely free use of the arm in every direction.

The histological examination of the tissue removed from this case shows only a slight amount of chronic inflammation. There was no bony material in the wall of the sac and the contents bore a close resemblance to the cheesy material obtained from Case III, which was subjected to analysis by Dr. Austin. It had every appearance of being composed of the same crystalline substance, though it was not submitted for chemical examination.

No x-ray of this patient's shoulder was taken.

REMARKS ON THE SURGERY OF THE RIGHT UPPER ABDOMINAL QUADRANT.*

BY F. H. LUND, M.D., BOSTON.

THE right upper abdominal quadrant has displaced the right lower abdominal quadrant from the position of the area of greatest surgical importance. The appendix and the right ovary, which both afford a fruitful field for surgical work, hardly extend to the surgeon such varied opportunities for differential diagnosis, or offer operative procedures of so great variety and interest as the organs situated in the right upper abdominal quadrant, namely, the gall bladder and its ducts, the pylorus and first part of the duodenum, the head of the pancreas and the right kidney. The surgeon called to attend attacks of pain in the right upper quadrant has to differentiate between pain due to stones in the gall bladder, to stones in the common duct, cholecystitis, stricture of the pylorus, painful ulcer of the pylorus or duodenum, perforation partial or complete of ulcers of the duodenum or pylorus and acute or chronic pancreatitis, etc. Complex surely are the problems, and fitted to tax our diagnostic skill to the utmost and often we must confess to defeat. Who can distinguish in every case between the pain of gallstones and ulcer of the duodenum and pancreatitis so accurately as to prove himself right every time by the test of exploratory laparotomy? If such a surgeon there be I have yet failed to meet him. Mayo puts the matter graphically as follows:

"In the upper abdomen we have attempted to study the stomach independent of the associated organs, the liver and bile passages, the duodenum and pancreas. The result has been a confusion in diagnosis and treatment. The palm of a hand may cover a serious lesion of any one of these organs and that, too, at the point of greatest liability; not only so, but any one of this group may start a pathologic process which may extend to any one of the others and with fully as great frequency as occurs under similar conditions in either the generative or urinary systems."

Graham,¹ in an extremely important paper based on 46 cases of duodenal ulcer operated upon by the Mayo brothers, conscientiously attempts the differential diagnosis between

* Read before the Obstetrical Society, Boston, Jan. 22, 1907.

¹ St. Paul Med. Jour., Sept., 1904.

cholelithiasis and duodenal ulcer. "Pain in cholelithiasis," he states, "is sudden, severe, has a wide field of radiation, comes absolutely irregularly, is independent of and not eased by food and is not often traced to it. No stomach history is given between the short precise spells. Spasm of the diaphragm is nearly always observed and vomiting and gas are present only during the attacks, and relief through vomiting and gas eructation is not as certain. In duodenal ulcer the pain comes in decided periods of attack, may be and often is sudden, has a very limited field of radiation, may be irregular as to time of separate attacks, but regular as to periods. It is quite dependent upon food, being early eased, but later pain and distress appear. The history of gas, vomiting and acidity runs parallel to the periods of pain. No spasm of the diaphragm occurs except in some cases of perforation. The vomiting and belching are usually decided in quantity and followed by relief."

In distinguishing between the duodenal and purely pyloric ulcer, he calls attention to the fact that the pain, gas, acidity and vomiting are more intense in the pyloric than in the duodenal form and that in the latter the type of pain is more apt to approach that of gallstones.

Stone in the common duct or decided infection of the gall bladder has a definite period of attack, but jaundice, enlarged gall bladder, chills and fever may here be present to assist in diagnosis.

Who of us is not familiar, however, with cases in which we have made a diagnosis of gallstone disease, on a basis of irregular attacks of pain in the right hypochondrium, with localized spasm and tenderness, the pain radiating over the abdomen and perhaps into the right shoulder, only to find on operation an ulcer of the pylorus, requiring a gastro-enterostomy for its relief? We have also operated for relief of a dilated stomach, with constant vomiting and emaciation, expecting to find a cancer or chronic ulcer of the pylorus, and found a gall bladder full of pus with a stone impacted in the cystic duct, obstructing the pylorus by involving it in a mass of adhesions and requiring gastro-enterostomy as well as a cholecystectomy.

In the presence of pain due really to a duodenal ulcer, the downward projection of an enlarged right lobe of the liver has simulated an enlarged gall bladder, so as to mislead us into an erroneous diagnosis of gallstones.

I may remark in passing that it has been a not uncommon mistake with myself and my colleagues to cut down upon a gall bladder believing it, on the evidence of palpation and percussion, to be enormously enlarged, and find out that the supposed dilated gall bladder was an enlarged right lobe of the liver, hiding under its edge a gall bladder filled with stones and surrounded by fresh inflammatory adhesions.

The gall bladder varies in its relation to the median line, also. In males with a high lying liver it lies not only well up under the ribs but further from the median line of the body. The

reason for this is that the liver lies in its normal position in the thoracic cavity, in the hollow of the ribs.

In women where the liver has been pushed down by lacing the waist, as it descends it is pushed inward by the inward projecting edge of the thorax, so that the gall bladder is pushed with the liver nearer to the median line, the location of pain and tenderness approach more nearly the pylorus and the head of the pancreas; and here is introduced another element in the diagnosis, that of pancreatitis. In the typical cases of chronic or recurrent sub-acute pancreatitis we have usually antecedent history of gallstone attacks, so that the history here is consistent with either gallstones, pancreatitis or both.

The pylorus also varies very much in position, the variations being sometimes the result of adhesions, sometimes apparently congenital. In a recent operation for cancer of the pylorus the writer operated by a median incision, but found the pylorus far up behind the liver and to the right, so as to be accessible with difficulty. In the next case, a right rectus incision was made, but the pylorus was found adherent to the liver exactly in the median line. In both cases extension of the incision was necessary. While the right rectus is usually the best, it may be of advantage to predetermine the position of the pylorus by inflation of the stomach.

In pancreatitis the tumor is nearer the epigastrium, and in its typical manifestation the tumor and area of tenderness is a little lower than in pyloric ulcer, and nearer the median line than in cholecystitis. The attacks of pancreatitis are attended with more shock and constitutional disturbance than cholecystitis; and in cases preceded by a history of gallstone attacks extending over months or years and presenting in the attack under treatment a marked element of constitutional depression, with moderately high temperature and slight jaundice, the tender area corresponding to the head of the pancreas, and especially if a tumor corresponding in outline to the head of the pancreas can be felt, we must be on the lookout for sub-acute or chronic pancreatitis. Fortunately the chief *desideratum* in the treatment of these conditions is the drainage of the gall bladder, so that through the exploratory incision we are in a position for the therapeutic of either affection. The writer has within a year dealt successfully with two cases of chronic pancreatitis and one of acute, by an incision through the upper part of the right rectus for the relief of attacks supposed to be due to gallstones. In two of the cases the location of the tenderness and resistance led to pancreatitis being suspected before operation, though an absolute diagnosis was not made till the abdomen was opened. In the acute cases, especially of the right hypochondriac or epigastric peritonitis, the diagnosis between perforating ulcer, pancreatitis, and acute cholecystitis, in my belief, is not always in the power of any man to make. These cases, however, urgently call for immediate exploration and through the right rectus incision

the diagnosis can be cleared up and the appropriate operative procedure carried out.

In the vast majority of acute stomach perforations, as is well known, the perforation is on the anterior surface and early diffusion of fluids takes place downward and to the left along the front of the great omentum. In these cases the mortality is in proportion to the promptness with which the surgeon acts, as many as 80% of the cases operated upon within twelve hours getting well.

The same is true of acute perforations of the gall bladder except that in the writer's experience these have been even more serious than those of the stomach. The mortality in acute pancreatitis, which Mayo well classes with the acute perforations, is as yet in doubt, but early operation with peritoneal drainage will undoubtedly bring about a more satisfactory state of things in this regard.

Operation upon an acute pancreatitis in a woman of sixty, consisting of drainage of the gall bladder with incidentally the removal of two stones and scoring the anterior surface of the pancreas and stopping the bleeding with gauze packing, the operation done twenty-four hours after the attack has resulted in the gratifying and complete recovery of the patient.

In two cases, both males, the writer has recently operated upon a diagnosis of cholecystitis, made by careful clinical observers, finding in one an ulcer of the pylorus which had perforated but had been walled off by adhesion to the under surface of the liver and in another an ulcer of the first portion of the duodenum. A gastro-enterostomy gave complete relief in both cases.

Duodenal ulcer is even more apt than gastric ulcer to be mistaken for cholecystitis, especially when threatened perforation sets up a local peritonitis, as the descending portion of the duodenum is directly in relation with the common duct and almost directly below the neck of the gall bladder.

In duodenal perforations it is an interesting fact, several times demonstrated in the writer's experience, that occasionally the greatest tenderness instead of being over the source or focus of the peritonitis, is situated at the edge or border of the process, where the advancing pus is limited by fresh fibrous adhesions. The peritonitis is hot at the edges and cold in the middle, so to speak.

In a case of recent peritonitis with general splitting of the abdomen, the writer made an incision over the appendix because here was the only tender point. The appendix was normal, but pus had run down between the colon and the abdominal wall from a perforation of the duodenum, which was found after carrying the incision upwards. It was sutured and drained and the patient recovered.

In alluding to the cases mentioned in this paper, which are selected from among a large number as the ones in which a wrong diagnosis was made, the writer does not wish to give the impression that it is not worth while to exhaust

all possible means to make a correct diagnosis before operating, for the reason that operation is so apt to reveal the fact that the diagnosis has been wrong. Careful weighing of the history, together with thorough physical examination, will enable one to arrive at a correct diagnosis in a majority of the cases, but there will remain a considerable number in which exploratory laparotomy alone will reveal the true condition.

We have spoken of the upper abdomen as the borderland of surgery; it is also the borderland of medicine, for in what other therapeutics than the surgical can we hope for relief of these conditions? At the autopsy we can get a picture of the conditions at the fatal close, whose secondary conditions have masked the beginnings and the course of the disease.

The surgeon, by early operations in cases of gallstones and gastric ulcer, has given us our present knowledge of the pathology of these diseases in their early and curable stage and also afforded to us in many cases our only method of rational therapeutics.

These facts have an importance also to the practitioner of medicine. If he wishes to acquire skill in the diagnosis of the intra-abdominal conditions which he is so often called upon to treat, he must attend not the post-mortem room, but the operating table of the surgeon. There he may find his diagnosis checked, confirmed or disproved, and can see the pathology of the conditions in the living at a time when they are often susceptible of relief. It is my belief that the clinic has displaced the autopsy table as the place for acquiring the pathological knowledge upon which skillful diagnosis may be based. The practitioner who sends his cases to the surgeon and then does not personally attend the operation and see the pathological condition misses his greatest opportunity for acquiring skill in diagnosis. He has followed the symptoms of his patient over a length of time and with a closeness of observation impossible to the surgeon or to anyone else than the medical attendant. If then he attends the operation and sees the actual pathological conditions, he is in even better position than the surgeon to profit by the combination of clinical observation and that of the operating table. Only by the co-operation of the surgeon and the clinician can either attain any special degree of diagnostic skill.

The fact that the diagnosis is in doubt should make no difference to the patient. He comes to the physician not for an exact diagnosis, but to be relieved of his pain and disability. In many cases we cannot say to him, "You have gallstones or you have duodenal ulcer, but you have a lesion in the upper right abdominal quadrant requiring operation for its relief." If we are prepared to deal with whatever lesion we may find of these organs we can benefit our patient, and unless we are so prepared we shall meet with many failures. The most important practical deduction to be made is that no operator should attack these cases of supposed cholecystitis

unless he is prepared to execute a change of front and perform a gastro-enterostomy or other suitable operative procedure in case he finds himself called upon to relieve an ulcer of the duodenum or pylorus.

The question may be legitimately asked, Is the early surgery of these conditions safe and attended by satisfactory results? The answer is that in the early cases and these alone is the surgery of this region eminently safe and satisfactory. The mortality of gall bladder operations, uncomplicated by stones in the common duct or cholecystitis, is less than 1% in competent hands. Gastro-enterostomy for pyloric stenosis gives a mortality of less than 5% and a high percentage of permanent cures. It is only in the late and neglected cases of surgical disease of the upper quadrant that the mortality is high, and here it is understood that the operation is one of last resort.

The speaker is aware that this excursion into the surgical borderland of the upper abdomen has been brief and unsatisfactory. He will be satisfied, however, if his hearers carry away the following points:

1. The advantages of early operation in diseases of the stomach, gall bladder and pancreas.
2. The imperativeness of early operation in perforations.
3. The recognition that present diagnostic measures are inadequate and consequent readiness to meet conditions different from those suspected before operation.
4. An interest in the great and growing field of the surgery of the stomach and pancreas.

PRACTICAL CONSIDERATIONS IN THE TREATMENT OF NEURASTHENIA.*

BY W. C. CANFIELD, M.D., BRISTOL, R.I.

To say that a person has neurasthenia is not stating the case much more definitely than to say that a person is *sick*, and the diagnosis of neurasthenia is often made as carelessly as that of *malaria* years ago.

There is a need among the profession for a more exact definition of the term. Few diseases have so wide a range of gradations from slightly impaired health to profound sickness, and as it borrows its symptoms from so many widely different diseases, both mental and physical, it is not strange to find many physicians go "cross lots" to their diagnosis, calling it neurasthenia without attempting to define it closely, as to its cause, or even the predominance of its symptoms, — a sort of blanket diagnosis covering complications and concurrent troubles alike.

A clear understanding of the causes that have brought about the neurasthenic state and of the channels through which they have been operative must be had before the physician can outline his plan of treatment. In no disease is it so necessary to analyze, not so much the symptoms of the case, as the personality or mentality of the patient

himself in order to drive back through these same channels the causes of the disease and block them against a second entrance.

While the causes might be classed in one group as psychic, their mode of attack with each individual varies. The avenues of approach are tortuous and often obscure, and the somatic manifestations are confined only by the entire epidermis of the patient. One cannot intelligently follow a routine of diagnosing simply "neurasthenia" to be cured by a more or less routine Weir Mitchell treatment, for that is grasping the letter and not the spirit of the case. That great pioneer in the treatment of neurasthenia, S. Weir Mitchell, started the ball rolling, but it has rolled a long way since he first promulgated his "rest cure." His plan of treatment was adequate and admirably adapted to meet the indications as they were then generally understood; namely, that neurasthenia is a diseased state in which the *physical* forces have been exhausted, the mental forces suffering equally, or perhaps not at all.

Neurasthenia is essentially a disease of the mind, a psychosis, and there may or may not be organic disease as an accompaniment or complication, but always there is some impairment of the physical as well as the mental functions. "Nervous exhaustion" as a synonym is a misnomer, as there is never literally exhaustion, and the crude idea of a large percentage of the laity is that it is a disease of the nerves themselves.

That neurasthenia is primarily psychasthenia, that it has its origin in the mind and that the body suffers secondarily as a result of the widespread influence of the mind upon the body is the trend of the most advanced observation. Over twenty years ago, when I first began to study this disease our nosological printing press (which works over hours these days) had not turned out such terms as psychosis, psychiatry, psycho-neuroses, and as I could not satisfy myself that these numerous physical symptoms of neurasthenia constituted a disease, *sui generis*, I often spoke of them as a "condition," feeling convinced that they were caused by more than a mechanical drain upon the physical vitality, that another and greater source of mischief was operative, but that the mind was so active in causation I did not appreciate. Even then it was recognized that another factor than overwork was necessary to bring about nervous prostration, and that factor was called "worry," as it is still called. The full significance of worry, however, was not then appreciated, but had we followed up its pointing more quickly we would have reasoned that worry is a function of the mind, a function that may exist temporarily in a healthy mind, is almost constant in an unhealthy mind, soon becomes chronic, and if long continued is sure to develop pathological effects in the body; that worry was a mental process and therefore the mind was the starting point of this disease. With this idea as a guide, careful analysis of each and sometimes of all the symptoms, in any case of neurasthenia, would have led

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