oil induced active peristalsis and led to the kinking. In the fourth case a mechanical obstruction in the sigmoid with a grossly distended colon, and an enormous amount of purgative herb remedies combined to play a corresponding rôle. The subjoined table summarizes the findings.

PROXIMAL BOWEL *Peristalsis active*	VOLVULUS	DISTAL BOWEL *Peristalsis inactive*
Case 1.—Bowel distended by heavy meal.		Bowel inactive from starvation.
Case 2.—Bowel distended with forced fluids.		Bowel paralytic from frost-bite.
Case 3.—Active purgation with castor oil.		Bowel paralytic from morphine.
Case 4.—Active purgation and bowel distension from purgative herb remedies.		Bowel mechanically obstructed by annular carcinoma.

All four cases have this in common that in each we seem to have a distal bowel inactive from one cause or another, with the proximal bowel thrown into unusual peristaltic activity, thus producing an antagonism which would appear to provide ideal conditions for the development of the torsion.

In discussing the part played by peristalsis in the production of volvulus, mention should be made of the recent investigations of Carey, the results of which may be very far-reaching. Carey has shown that in the dog, cat, sheep, cow and pig the muscular coats of the small intestine, heretofore described as inner circular and outer longitudinal, are in reality arranged in spirals, the inner coat as a very close spiral, the outer coat wound in a more elongated spiral which makes a complete turn every 20 to 50 cm. or more. This arrangement imparts a screw-like action to peristalsis. Whether the results of these investigations will shed further light on the production of volvulus remains to be seen, but they are certainly very suggestive.

Summary

A consideration of the literature and of the cases here recorded seems to justify the conclusion that we must revise our current teaching that volvulus of the small intestine can occur only in the presence of adhesions or other structural abnormalities of the intestinal tract. Greater emphasis must be placed on disordered peristaltic action, leading to a relative antagonism between adjoining segments of bowel, unequally filled.

THE EVIDENCE OF ORGANIC HEART DISEASE.*

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I HAVE selected this subject in order that I may discuss with you the evidence upon which to base a reasonably correct diagnosis of organic heart disease, in so far as it applies to patients who are not too ill to consult you in your office. On this basis I shall not refer to acute inflammatory affections such as carditis, endocarditis and pericarditis, nor to cases of severe heart failure, both of which groups offer no special difficulty in the recognition of the cardiac factor, although individual features of the case may offer diagnostic difficulties. I do not propose to deal with the subject exhaustively, nor to deal with the evidence which differentiates the various heart lesions from one another. I shall simply attempt to assist you in answering one question—does organic disease exist, or does it not? This is the chief difficulty to be overcome by the general practitioner, and I wish to consider and weigh the evidence from his standpoint. Upon him rests and always will rest, the great responsibility of giving common sense advice to ninety-nine out of every hundred patients, who seek medical help for symptoms of heart disease, real or fancied.

In military practice, we had much statistical information of the importance of cardiac cases

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from the standpoint of numbers. Lung cases formed the largest medical group, and heart cases formed the second largest group, and errors in diagnosis were very numerous. In civil practice we may safely state, even in the absence of statistics, that heart cases form a large and puzzling group.

No question is heard more frequently in the consulting room than, "Doctor, how is my heart?" The following quotation from Sir William Osler's monogram on Angina Pectoris, while made in reference to Angina Pectoris, applies equally well to heart cases in general. He says, "There is no group of cases so calculated to keep one in a condition of wholesome humility. When you jostle against a hale, vigorous specimen of humanity, who claps you on the back and says, 'The deuce take you doctors, I have scarcely yet got over my fright,' you would like to forget that five years before, you had almost signed his death warrant in a very positive diagnosis of Angina Pectoris vera. On the other hand, Mr. X. has left you with a full assurance that his cardiac pains are due to overwork or tobacco, and you have comforted his wife, and lifted a weight of sorrow from both, by your favourable prognosis. With what sort of an appetite can you eat your breakfast, when one week later you read in the morning paper the announcement of his sudden death in a railway station. Or take another aspect, poor Mrs. Doe has gone softly all these years in the bitterness of her soul, since you took that grave view of her vasomotor or hysterical angina." The question of organic heart disease is one of the greatest importance, and has to do not only with the welfare of patients, but in a very real sense with the reputation of physicians, and is worthy of serious attention. I shall therefore attempt to point out some of the pitfalls which lie in the path of the diagnostician in his efforts to make as few mistakes as possible.

We have all experienced the humiliation which accompanies a tumble on a slippery sidewalk. I know of no stronger incentive to make one walk cautiously in future. The desire to walk upright is intensified if the fall happens to have been witnessed by our intimate friends. In the diagnosis of disease, nothing compels one to exercise increased care more than a diagnostic tumble. Here again, the greatest stimulus is at work when our colleagues have witnessed the fall. In both cases there are those who look on with amusement, those who find pleasure in kicking you in the ribs, and those who lend a helping hand, and help to soothe the sting of the fall. Much can be learned from the survey of the more common diagnostic errors. It is convenient to consider them in two groups. The errors in the first group are due to a failure to recognize signs and symptoms which have a high value in diagnosis, and they result in a failure to diagnose disease when it is actually present. The points to emphasize are as follows:

1. *Diastolic Murmurs.*—Many of these are missed because they are low pitched. In acoustic terms, they are near the lower border of audibility, and are exceedingly difficult to hear.

2. *Presystolic Murmurs.*—Some of these are not properly timed by the observer. Others escape notice on account of low pitch and short duration. In both cases the difficulty is overcome in a measure by examining the patient in a very quiet place, by asking the patient to hold his breath, preferably at the end of expiration, and by examining the patient in various positions, sitting, lying, standing, after exercise and on the left side. These murmurs have such a high value as evidence of organic disease, that their recognition is very important. They are so seldom functional, that in practice they should always be regarded as organic. They may be heard at one time and not at another, a feature which has been erroneously regarded as evidence of a functional nature. One positive finding is worth more than several negative findings, provided that the abnormal sounds are unmistakable, and are not located in the end of the stethoscope, or in the cerebral cortex of the observer.

3. Symptoms such as breathlessness, præcordial pain, fatigue in those past middle life. The absence of physical signs often puts one off the track, when a careful analysis of subjective symptoms permits of no other explanation than a cardiac one.

The errors in the second group result in a diagnosis of organic disease when it does not exist. They are due to wrong and excessive values being placed on certain signs and symptoms. This is probably the larger group, and

in many respects the more serious. It is exceedingly common to meet patients who have been told by physicians that they have heart disease of varying degrees of seriousness, and a careful weighing of evidence reveals that no disease is present. The effect on the patient is often disastrous, and results in a state of semi-invalidism, due in part to suggestion, and in part to the fact that the patient is deprived of the benefits of exercise incident to sport, or the activities of a normal healthy life. It should be noted in passing, that such a patient will be cured of his symptoms, if he be convinced, not merely told, that there is nothing radically wrong. The points to emphasize in this group are as follows:

1. Systolic murmurs. There is no doubt that systolic murmurs are frequently present in normal hearts, and this statement is borne out by numerous post-mortem observations. It has been said with some degree of authority, that fifty per cent. of such murmurs are not due to organic causes. It is little wonder that they are responsible for bitter controversy and injustice, especially in life insurance work and pension adjustments, when in the hands of many physicians, a murmur or other abnormal sound is always interpreted as evidence of organic disease. How can we solve this dilemma? There are two helpful rules—First, regard all systolic murmurs in the pulmonary area or with maximum intensity in that area as not organic in the absence of signs of congenital heart disease; Second, if the murmur is heard in mitral or aortic area, look carefully for other signs of organic disease such as hypertrophy, thrills, diastolic and presystolic murmurs, œdema and other signs of heart failure; also inquire for a history of rheumatic fever, and base your opinion, not on the systolic murmur, but on the other evidence present.

2. Irregularities which disappear with exercise are either premature beats or sinus arrhythmias, and do not indicate organic disease.

3. A diffuse impulse is often seen in nervous individuals, and is frequently regarded wrongly as evidence of dilatation.

4. Symptoms such as pain over heart, palpitation, breathlessness, syncope, weakness in young people, are frequently wrongly interpreted as evidence of organic disease.

5. Myocarditis and fatty heart are often diagnosed on insufficient evidence.

Other points might be mentioned here but these are the most common.

It may be profitable to dwell for a moment on the causes of these diagnostic errors:

1. Imperfect knowledge of the fundamentals of diagnosis accounts for many, and the remedy is obvious.

2. Hasty and imperfect examinations in the hurry and flurry of a busy professional life, result in a failure to collect all the data, and are responsible for errors in the hands of those who are quite familiar with the essentials of diagnosis.

3. Lack of confidence in findings is a common cause in early years of practice, and is overcome only by experience. In a certain type of diagnostician, there is also a false confidence or cock-sureness, which leads one into the most absurd errors. Inexperienced observers often hear sounds which do not exist.

4. Lack of standards for estimating the degrees of hypertrophy, for measuring the intensity of heart sounds, and for measuring the strength of the apex beat, is a difficulty for which we are not to blame.

5. The assessing of signs and symptoms at a wrong value is overcome only by reasonable familiarity with the whole subject of heart disease.

6. Another factor is psychological, and is explained by noting what happens in a game of chess. One may ponder over the board for a long time, seeking a solution of some problem, and allow a piece to be seriously threatened before one's eyes.

Similarly, in the more complex game of diagnosis, a simple and fundamental point is sometimes ignored while one has his vision focussed on some other feature of the case. How often have we heard of the organic heart treated for tuberculosis in a sanitorium, or the tuberculous patient treated for neurasthenia, or the tabetic operated on for gastric ulcer, when the evidence is staring the diagnostician in the face.

We may now pass on to the consideration of the most reliable evidence of organic disease. It consists of certain signs and symptoms which have been correlated with pathological findings, checked up repeatedly by many observers, and have been handed to us with a certain value.

which is seldom an absolute value, and in some cases permit of different interpretations. It should be remembered that the man who can make one hundred per cent of correct diagnoses has not yet been born, and the goal to be attained is a high percentage of correct ones. It is convenient to divide the evidence into two groups, first that which should be assessed at a high value, and second that which should be assessed at a low value. In the first group are placed:

1. Hypertrophy, which in turn is based on (a) position of apex beat, (b) left border of heart, (c) forcible apex beat, (d) orthodiagram, (e) presence of other signs of organic disease.

2. Diastolic and presystolic murmurs are organic in ninety-eight per cent. of cases. A pulmonary or Graham Steele murmur is a rare finding, and this illustrates a principle that if any sign is organic in a high, say ninety-five per cent., and functional in say five per cent., it should be assumed to be organic unless the evidence to the contrary is very strong.

3. Irregularities which are maintained after exercise are due to fibrillation.

4. A pulse rate of thirty-five or under, means heart block or Stokes-Adams' syndrome.

5. Angina Pectoris vera should be assessed high.

6. Signs of definite failure such as œdema, orthopnœa, venous engorgement, enlarged liver.

7. High blood pressure, one hundred and eighty or over, carries with it a diagnosis of cardiosclerosis.

8. Thrills, if definite.

9. Pulsus alternans, Cheyne-Stokes breathing, paroxysmal tachycardia.

10. Definite clinical pictures such as aneurysm, endocarditis, congenital disease. A history of rheumatic fever or of syphilis are valuable supporting evidence.

The following signs should be assessed at a low value: Systolic murmurs; reduplication, accentuation and feebleness of heart sounds; diffuse impulse; irregularities which disappear with exercise; exocardial sounds or sounds of doubtful origin; moderate rises in blood pressure; symptoms which constitute the effort syndrome; syncope, usually not due to heart; palpitation; pallor; cyanosis, due to many extra cardiac causes; bradycardia and tachycardia.

A sign in group (1) should be capable of demonstration, if not, it should be placed in group (2) for assessment purposes. A diagnosis is seldom made on one sign alone. Some reference should be made to the part played by special instruments in furnishing evidence of organic disease. The important ones are the polygraph, the electrocardiograph and the orthodiagraph. All these have a prominent place in cardiac diagnosis, but it is important for the general practitioner to know how near he can get to correct values without these special aids. In recent years, it is rare to find in the current medical publications, an article on heart disease, which is not clothed in electrocardiographic language, only intelligible to the few who are familiar with electrocardiographic work. Of the eight thousand physicians in Canada, it is safe to state that not more than eighty, or one per cent. can follow with any degree of profit, the clinical deductions of the electrocardiographer. What about the other ninety-nine per cent? This equipment is not, nor ever will be, available to them, nor will the benefits which they confer, be directly available to ninety-nine per cent. of people who suffer from heart disease. Consequently we should know how far we can travel without them. I do not wish to give the impression that I undervalue these instruments. They have contributed a great deal to our accurate knowledge of certain heart conditions, and rank among the most ingenious contrivances which modern medicine has discovered. In many cases, however, they have enabled us to associate certain conditions with signs and symptoms in such a manner that we can recognize them with confidence without their aid. Auricular fibrillation can be recognized in ninety per cent. of cases, or more, by bedside evidence. Complete heart-block is easily recognized in most cases. No one has emphasized more clearly than Sir Thomas Lewis himself, that the practical problems of cardiology must be solved by the application of rules which can be used by general practitioners. In Colchester, where all this equipment was available, it was only resorted to in a small percentage of cases. Whatever has been accomplished by these special methods in the way of benefits to heart sufferers must be dispensed through the medium of the general practitioner.

The following points may be relied upon to enable the general practitioner to recognize the various irregularities without special instruments of precision:

1.—*Sinus Irregularity*:

Seen in young people—under thirty.
Beats equal in volume but not in time.
Radial and apex beats correspond.
Disappears with exercise.
The irregularity repeats itself in a regular manner.

2.—*Premature Beats of Extra Systoles*: *Common.*

Dropped beat at radial pulse.
A premature beat heard at apex during pause.
Disappears with exercise.
May be described by patient.

3.—*Heart Block*: *Rare.*

(a) Partial.
Dropped beat at radial pulse.
Complete silence during pause.
Not affected by exercise.

(b) Complete.
Slow pulse, thirty—thirty-six.
Attacks of loss of consciousness.
Epileptiform convulsions.

4.—*Paroxysmal Tachycardia*:

Abrupt onset of rapid regular rhythm, which lasts for a variable time—a few seconds to many hours. Abrupt restoration to normal rate.

5.—*Pulsus Alternans*:

Every second beat feeble, but no change in rhythm; seen only in cardio-renal disease.

6.—*Auricular Fibrillation*:

The beats are unequal in time and volume.
If this irregularity is associated with signs of definite heart failure, the diagnosis may be made with confidence.
If no heart failure is present, give patient sufficient exercise to increase rate to one hundred and twenty or more. If irregularity is maintained, the diagnosis may be made with confidence.

7.—*Auricular Flutter*:

A persistent rapid regular rate with signs of heart failure in absence of extra cardiac causes such as fever, may be flutter. This is so difficult to recognize by simple methods that it is probably better not to attempt to diagnose it. The cases will then fall into fibrillation group, or be treated as cases of failure.

This concludes my survey of the evidence of organic heart disease. Attention to the above points will permit a very high percentage of correct diagnoses.

Let me again emphasize the central thought in my mind. It is, that in the very nature of things, the general practitioner is responsible for the care of ninety-nine per cent. of the cardiac patients, and he should be familiar with the evidences of disease which is easily within his reach. He should realize that he is able to assess values correctly in a surprisingly high percentage of cases, and that he must not allow his mental vision to be blurred by the dazzling brilliance of modern laboratory methods. He must take advantage of all which these special methods have to offer, but not allow them to supersede the simple clinical methods, especially when the latter are the only methods available.

Acute Pancreatitis in Children.—Horace B. Anderson, Johnstown, Pa., reports a case which he regards as unique in that (a) it is a case of acute haemorrhagic pancreatitis in a child, aged four years; (b) there were no lesions of the gall bladder or biliary passages; (c) there was a well defined cirrhosis of the liver, and (d) there was a well defined acute duodenitis present. The child was admitted to the hospital because of pain in the abdomen, vomiting and constipation. Two days previously, the child ate a dinner consisting largely of cabbage, but went to bed that night apparently in normal health. At 4 a.m., she complained of abdominal pain, and soon she began vomiting. The vomitus contained food particles eaten the day before. A physician at 9 a.m. found the child very ill, but without much fever. He prescribed cathartics and something to ease the pain. The child became progressively worse: the abdomen became more distended and rigid, and vomiting continued. She did not have a bowel movement for two days. The patient had one bowel movement, consisting of a dark bluish, semi-liquid material, just before she died, one hour after admission to the hospital. While in the hospital the temperature was subnormal, the pulse very weak and rapid, and respirations accelerated.—*Jour. Am. Med. Assoc.*, April 21, 1923.