

A Clinical Lecture

ON

PTOSIS OF THE LIVER AND THE "FLOATING LOBE."¹

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GENTLEMEN,—I propose to deal this afternoon with the condition known as ptosis of the liver and with that strange tumour which is a phase of this ptosis and which has been styled the "floating lobe." These abnormalities of the liver are not common, but they are of interest inasmuch as they produce "abdominal tumours" which have been the source of no little confusion in diagnosis and have been the subject of questionable methods of treatment.

DEFINITIONS.

By ptosis of the liver is meant a sinking down or dropping of the liver in the abdominal cavity. The displacement is such that the gland leaves its position under the dome of the diaphragm and becomes in extreme cases apparently free in the peritoneal space. The terms "prolapse of the liver" and "dislocation of the liver" have been applied to this condition and little exception can be taken to the phrases. The abnormality is, however, not fitly expressed by the terms "moveable," "wandering," or "floating" liver. The liver is normally moveable and in ptosis of the organ the increase in mobility is quite secondary and subordinate to the change in situation. The liver in these cases can, moreover, hardly be said to float as does the kidney in an allied condition nor is its range of unusual movement such as to allow it to be compared to the "wandering" spleen. In ptosis of the liver it is assumed that the prolapsed organ is sound or is at least free from gross disease and also that it has not been displaced by mechanical means such as by deformity of the spine or thorax or by pleuritic effusion or the like. In fact, in hepatoptosis a liver practically sound has left its place under the ribs and is discovered as a free abdominal tumour in the belly cavity.

The "floating lobe" represents a condition which is quite distinct from the simple ptosis or state of prolapse which has just been defined. In the case of the "floating" lobe the main body of the liver need not have sunk downwards and the upper limit of hepatic dulness need not be other than normal. A portion of the right lobe of the liver has, however, become projected downwards in the form of a large tongue-like appendage. This unusual lobe hangs down in the right flank and readily reaches to the iliac crest or passes well into the right iliac fossa. It is suspended like a massive apron in front of the kidney. It gives rise to the suggestion that the liver has been partly molten and that a portion of the softened mass on its heavier side had slid down until arrested by some process of solidification. To this partial or local ptosis of the liver have been applied the terms "floating lobe," "appendicular" or "linguiform lobe," and "Reidel's lobe." The condition is often associated with some sinking down of the whole organ or some tilting down (*mouvement de bascule*) of the right portion of it.

It may here be said that the first clinical description of ptosis of the liver appears to have been given by Cantani² in 1865. He uses the term "*il fegato ambulante*." The literature of the subject has since then become very copious and one writer alone (Glénard) has collected 80 reported cases of this particular trouble.³

It will be desirable to deal first with ptosis of the entire liver and then with the peculiar deformity known as the floating lobe.

MEANS BY WHICH THE LIVER IS SUSPENDED.

Without going into anatomical detail it is well to take a brief note of the position of the liver and of the means whereby it is retained in place.

The upper limit of hepatic dulness is represented in the mammary line by the fifth rib, in the mid-axillary line by the seventh rib, in the scapular line by the ninth rib, and posteriorly by the eleventh rib. The dulness along this line of limitation is not absolute. Absolute dulness will be represented in the mammary line during quiet breathing by the sixth rib; on forced inspiration this line of dulness descends to the seventh rib. The lower limit of dulness corresponds in the mammary line about with the costal margin, in the axillary line to the tenth interspace, and in the scapular line to the twelfth rib. On deep inspiration the lower margin of the liver on the right side appears to descend from an inch to an inch and a half.

The means by which the liver is supported are the following. 1. By the ligaments of the organ. The disposition of these need not be described, but considering that the average weight of the liver is between 50 and 60 ounces one is struck with the fact that these structures appear feeble and somewhat inadequate for their work. 2. By intra-abdominal tension as represented by the resistance of the anterior abdominal wall on the one hand and the gastro-intestinal mass on the other. This mass tends to force up the under surface of the liver and to prevent its tilting either in an antero-posterior or lateral direction. When the viscera are removed and the body is erect there is a tendency for the inferior or anterior border of the liver to nod forwards and for the heavy right lobe to tilt downwards. The important part that a well-developed and muscular abdominal wall plays in the support of the liver can be appreciated when it is compared with the relaxed, flabby, and pendulous parietes met with in the "wallet belly" or *ventre en besace*. 3. Possibly by intra-hepatic tension. Glénard and Siraud⁴ injected water into the veins of the liver in a cadaver. The increase thus produced in the volume of the organ showed itself by the straightening of the under concave surface, which became even convex, by the projection forwards and upwards towards the anterior abdominal parietes of the anterior edge of the liver, and by the lowering of this margin below the costal margin while the upper line of hepatic dulness became raised. It has been noted in support of the view suggested by these experiments that in cases of chronic congestion of the liver even with flaccid abdominal walls the anterior edge of the gland will often keep in place well. 4. Above all by the vena cava. There is no doubt but that this great vessel, with its firm hold of the liver on the one hand and its close connexion with the aorta and vertebral column on the other, represents the most substantial means whereby the liver is suspended. This fact has been fully demonstrated by Faure and Landau.⁵ Faure, indeed, says that the liver is appended to the vena cava as the heart is to the great vessels, and that the pedicle of the liver is the vena cava. The hold that this great vein has upon the organ is very evident in removing the liver in an ordinary post-mortem examination.

THE MANNER OF THE DOWNFALL.

The ptosis of the liver may be of any degree. In the slightest forms the anterior border on the right side will project an inch or two inches below the costal margin. In the most extreme type the whole gland appears, on superficial examination, to have dropped from its place and to be loose in the abdominal cavity. The liver, however, even in the extreme cases, is not so free from its connexions as may at first seem. If the organ moves from its place it can move only in one direction—viz., downwards. It does not, however, sink bodily downwards with the inclination of its surfaces unchanged. The attachments of the liver become relaxed, but they do not all yield to the same degree. The most potent means of attachment of the gland is, as already stated, the vena cava. It thus happens that in ptosis of the liver the posterior surface or border of the organ moves the least. The movement of the liver in its downfall can be best appreciated by imagining it to be suspended from the spine by its somewhat narrow posterior surface at the site of the fossa for the vena cava. The anterior part of the liver nods, as it were, forwards. The sharp anterior border becomes lower and lower, the upper and convex surface becomes more

¹ Prepared for delivery at the London Hospital during the last winter session.

² *Annali Universali di Medicina*, Milano, 1865, p. 373.

³ *Les Ptoses Viscérales*, Paris, 1899, p. 625. Among other monographs of importance may be mentioned those of Faure, *L'Appareil Suspendeur du Foie*, Thèse de Paris, 1892; by Landau, *Die Wanderleber*, Berlin, 1885; and by Terrier and Auvray, *Le Foie Mobile*, *Revue de Chirurgie*, 1897, p. 621.

No. 4002.

⁴ *Lyon Médicale*, June and July, 1895.

⁵ In the monographs referred to in Note 3.

and more anterior, and the under surface looks more and more backwards. The liver, indeed, has been rotated forwards (*mouvement de bascule*), about a transverse axis passing through the posterior part of the gland.

Moreover, if the vena cava be regarded as a pedicle of the liver or as a pivot for rotation it will be noticed that the heavier part of the organ lies to the right of the fossa for the vein. Thus it happens that the liver makes a *mouvement de bascule* about an antero-posterior axis whereby the right lobe descends very markedly and the left lobe remains more or less in place. Thus it comes that it is the right end of the great lobe which first shows itself in ptosis of the organ and which represents the maximum degree of the prolapse. As a result of this tilting, or see-saw movement, to the right the whole liver becomes oblique, the line of obliquity being from above downwards and outwards. This is especially shown by the position of the anterior or inferior border.

THE DEFORMITY OF THE LIVER.

There is, however, another element in the condition besides a mere alteration in place. The prolapsed liver invariably becomes deformed. So marked is this that there are some writers who consider that the deformity is antecedent to the ptosis.⁶ The liver becomes more flattened out. The anterior or inferior border of the right side seems to be drawn downwards and, with the gland adjacent to it, much thinned. Indeed, the flattening of the right lobe appears to be due to the advance towards one another of the anterior and inferior surfaces while at the same time the inferior surface comes more nearly in the same plane as the posterior. The condition may be expressed in another way by saying that the anterior surface of the liver is elongated at the expense of the superior surface and the inferior surface at the expense of the posterior. The posterior surface of the liver becomes much less thick and the anterior border, which presents itself so readily for examination, becomes elongated downwards, thinned, and often a little turned back.

In a marked case of ptosis the liver appears as a freely moveable tumour in the right side of the abdomen. The lower part of this tumour may pass deeply into the right iliac fossa or may even reach to within two or three fingers' breadths of the os pubis. So much more of the upper and convex surface is exposed by the prolapse that on first examining the mass there is apt to be the impression that the whole of the dome of the gland can be felt. As a matter of fact the liver is not so low down that the upper surface can be surmounted by the examining hand. Faure,⁷ however, mentions an extreme case in which the highest part of the convex surface of the liver was nearly as low as the margins of the ribs. An account of the tumour as it appears clinically will be given subsequently.

In many examples of ptosis of the liver a nearly transverse groove is found across the anterior surface of the elongated part of the right lobe. The peritoneum along this groove seems to have undergone a fibrous transformation and the change has been described by some as due to "transverse hepatitis." The formation of the groove has been commonly ascribed to the pressure of the costal margin against the prolapsed liver, the pressure being itself the result of tight corsets. The groove may be deep and may form a real isolating constriction. Livers so deformed have received the names of the "constricted liver" "*le foie cordé*," "*schnür-leber*," and the like. The portion of the right lobe below the constriction may become almost separated from the main mass of the gland. An exaggerated form of this latter condition has received the name of "*la foie en gourde de pèlerin*" (the pilgrim's bottle liver). It will be seen later how close a relation these deformities (which all concern the outer and lower part of the right lobe) have to the "floating lobe."

THE CAUSES OF THE PROLAPSE.

Of the etiology of this affection little that is precise is known, and opportunities for post-mortem examination appear to have been few. No less than 80 recorded cases of ptosis of the liver have been collected by Glénard, including six cases of the "floating lobe." The trouble is infinitely more common in women. Of the 80 cases 73 occurred in females and only seven in men. It is

an affection also of late middle life and is mostly met with between the ages of 35 years and 60 years. Among the female patients a history of multiple pregnancies forms a very noticeable feature. The trouble would appear to be largely the outcome of what may be termed a general relaxation of the tissues of the abdomen. There is frequent mention in the histories of these patients of feeble muscular development, of indifferent health, of attenuated abdominal walls, of ventral and other herniæ, of a flabby and pendulous abdomen, of prolapse of the whole mass of the intestines, of moveable kidney, and of displacements of the uterus. In quite a large number of the cases there is a history of antecedent abdominal disease, although not necessarily of the liver. There is no evidence to show that the trouble is due to any congenital abnormality of the hepatic ligaments. With regard to the seven cases in men in three cases the liver appears to have been free from disease, but in the remaining cases there is evidence of advanced hepatic trouble (cirrhosis, hypertrophy from malaria, and enlargement with ascites in connexion with heart disease).

The question of tight-lacing as a possible cause of ptosis of the liver in women has been very exhaustively discussed by many authors and the balance of evidence tends to show that that barbaric habit takes no part in this particular deformity. The occasional longitudinal furrows upon the convex surface of the gland which have been ascribed to tight-lacing have been shown by Turner to be almost as common in males as in females and to be due probably to congenital causes. Tight-lacing may no doubt alter the shape of the liver by compression and may lead to an extension downwards and an attenuation of the outer and inferior part of the right lobe. When this part of the organ has passed below the costal margin then it is probable that the transverse groove, which has been above described as of common occurrence, may be produced by an undue constriction of the waist. There is no gainsaying the fact that the maximum degree of constriction produced by the corset falls below the mass of the liver.

With regard to the state of the gland itself in ptosis of the liver an examination of the 80 cases above alluded to gives the following result. In 50 of these cases the liver appears to have been sound, or at least free from apparent disease. It is true that in some few of these 50 cases there is a history of long antecedent jaundice and of attacks of "colic." In the remaining 30 cases the account is incomplete in four cases and the other 26 examples present instances of liver disease, the most frequent troubles being gall-stones, cirrhosis, and hypertrophy. There is one case of cancer of the liver and one of hydatid cyst.

THE SYMPTOMS OF PTOSIS OF THE LIVER.

The symptoms presented by a typical case are the following. In the right side of the abdomen about the level of the umbilicus is a large rounded moveable tumour which will be visible under the parietes. On the left it will extend to the median line or beyond. Below it may reach well into the right iliac fossa and come within two or three fingers' breadths of the os pubis. The mass extends above under the costal margin, and although a good deal of its upper surface can be felt the hand cannot be passed entirely above it. It is lost, indeed, beyond the costal margin. The tumour is solid, has about the consistence of the gravid uterus, and is very commonly described as of the size of a child's head. The body of the tumour presents a smooth convex surface and a generally rounded outline. Its inferior border is directed obliquely from above downwards and outwards and is thin and sharply defined. Along this border can be usually felt a characteristic notch—the notch at the site of the round ligament. The mass moves as if about a point of attachment placed just below the diaphragm. It can be reduced into the hepatic region. Its most free movement is upwards and downwards, but it also has a considerable degree of lateral mobility. The lower border can be lifted up. The tumour can not only be moved by manipulation, but it moves with changes in position, being most dependent when the patient is erect and least prominent when recumbent. It falls towards the left when the patient lies upon the left side. It descends on inspiration. The more complete the degree of ptosis the less marked is the descent on inspiration. The right part of the tumour appears to be more moveable than the left. The mass is dull on percussion. The hepatic area of dullness is, on the other hand, wanting or is depressed according to the degree of the prolapse. There is commonly a relaxed condition of the abdominal wall.

⁶ For example, Hertz: *Abnormitäten in der Lage und Form der Bauchorgane*, Berlin, 1894.

⁷ *Traité de Chirurgie*, par Dentu et Delbet, vol. viii., p. 249, Paris, 1899.

The prolapsed liver has been mistaken for an ovarian cyst, for a cyst or tumour of the mesentery, for a new growth in the omentum, for hydatid cyst, and most commonly for an enlarged and moveable kidney. Wickham Legg,⁸ on the other hand, records a case which was diagnosed to be one of ptosis of the whole liver and which proved on post-mortem examination to be a tumour of the kidney. The patient was a man, 36 years of age, who died from lung disease. The tumour was in the umbilical region and measured 15 inches transversely. The hepatic area was resonant.

As already stated, the trouble may be associated with a moveable kidney. So far as symptoms are concerned there may be none and the patient may be free from any abdominal trouble. In other instances vague pains are complained of in the abdomen which radiate to the back, the loins, and the shoulders. There is a sense of abiding discomfort in the abdomen, of a "dragging from the back," and of a sinking down of the viscera generally. These troubles are increased by movement, by exercise, and even by the erect position. The patient is most comfortable when lying down. In not a few of the cases there has been complaint of dyspepsia, of dilated stomach, of nausea and vomiting, of flatulence, and of constipation. In certain instances cramps and colic have been conspicuous symptoms. In many of the recorded cases there are definite nervous disturbances—palpitation, vertigo, exhaustion, headaches, anorexia, conditions of irritability and depression, and symptoms which are usually ascribed to hysteria or melancholia. Faure would add to these temporary jaundice due to flexion or compression of the bile-ducts, ascites due to tension or compression of the portal vein, and œdema of the lower limbs consequent upon pressure on the vena cava. It is a question whether this series of symptoms could properly be ascribed to simple ptosis of a normal liver.

In isolated examples the tumour has been described as in the middle of the abdomen. The reduction—which is usually quite painless—has been attended with distress, nausea, and even vomiting. In some 14 cases out of the 80 cases the tumour was irreducible and in three cases reduction was incomplete. My impression is that imperfect reducibility is more common than these figures would appear to show. In four instances two notches were noticed in the lower border of the liver. In a case or so the gall-bladder and the round ligament have been identified through the parietes. In a few isolated examples the liver has been described as "tender."

I have met with two examples of complete ptosis of the liver. One was in the person of a woman, aged 72 years, whom I saw in consultation with Dr. Stanley Smith. She was unmarried and although by no means strong she could be described as enjoying fair health. She had a long, narrow thorax, of a type which I have described in "Allbutt's System of Medicine."⁹ The abdominal aperture of the thorax appeared to be constricted and the costal margins below the xiphoid cartilage were for a long way parallel to one another and were separated by a quite narrow interval. There was no history of tight-lacing. The liver was entirely prolapsed and formed a very prominent tumour when the patient was erect. Beyond a little occasional dyspepsia she had no abdominal symptoms of any kind. The tumour was entirely reducible and quite painless. The patient was thin and the lower part of the abdomen was pendulous.

The second case was in a married woman, about 50 years of age, who came to see me at the London Hospital. She had had an ovariectomy performed some years previously. There was a ventral hernia at the scar and the whole abdominal wall was quite remarkably lax and pendulous. The patient was disposed to corpulence and all her tissues were soft and flabby. The liver was completely prolapsed and had been mistaken for an abdominal tumour. The patient was quite an invalid and could walk but little. She was a neurotic wreck and complained of an infinite variety of indefinite abdominal symptoms. There appeared to be a prolapse of the whole mass of the intestines and both kidneys could be moved out of the loins. No treatment was suggested in either of these cases beyond the wearing of a supporting belt.

EXAMINATION OF THE LIVER.

In cases of hepatoptosis of marked degree the examination of the tumour is attended with no difficulty. The patient

should be examined while standing erect as well as when recumbent. Digital exploration should not be considered to be complete until it has been applied when the patient is lying upon the left side and also when in the crawling position, on the hands and knees. In the latter attitude the abdominal wall is well relaxed and the parts are very favourably disposed for palpation.

In slight degrees of ptosis of the liver a satisfactory examination is not quite so easy. Medical text-books point out fully what errors may occur in the examination of the liver by percussion, what conditions may make the organ appear too small, and what conditions may lead to the erroneous impression that it is too large. It is needless, also, to insist that the definition of the lower margin of the liver by palpation is not always a matter easy to determine. In all grades of ptosis of the liver a precise examination of the inferior border of the gland is of the utmost importance and it will often be found of advantage to supplement the ordinary methods of palpation by that described by Glénard under the title of "*le procédé du pouce*."

FIG. 1.



The examination of the liver by the "*procédé du pouce*." Steps 1 and 2. (Glénard.)

This method of palpating the liver is conducted in the following manner. The inferior part of the gland—the presenting part—is examined solely by the pulp of the left thumb. The patient lies upon the back with the knees extended and the shoulders a little raised. The surgeon sits on the right side of the couch facing the patient.

Step 1.—He supports the right loin with his left hand. The four fingers of this hand are applied to the lumbar region, so that the middle finger is just below the posterior costal border and has its tip about the costo-vertebral angle. The loin is pushed forwards. The left thumb is free and in abduction. (See Fig. 1.)

Step 2.—The abdomen in the hypogastric and right iliac regions is depressed by the right hand laid flat upon the surface. The object is to push up under the liver the sub-jacent mass of intestines. The fingers are placed together and their tips are directed obliquely outwards and downwards towards the right groin which they just reach. The palm of the hand is applied about the median line a little below the navel. The hand is then made to describe a circular movement so that the fingers point upwards and outwards, the rotation being around the thenar and hypothenar eminences. Very firm pressure is exercised by the hand so placed. (See Figs. 1 and 2.)

Step 3.—The pulp of the left thumb is made to depress the anterior abdominal wall in the flank below the presumed site of the lower edge of the liver. The pulp of the thumb looks backwards and is at a variable distance from the tips of the right fingers but a little below the upper part of the furrow of depression caused by the right hand. (See Fig. 2.) The left thumb is pressed deep below the liver edge. It is to be remembered that this edge runs obliquely and in some

⁸ St. Bartholomew's Hospital Reports, 1877.

⁹ Article, "Enteroptosis," vol. iii., p. 589.

cases—e.g., the floating lobe—may be nearly parallel with the median line. The hands are kept in place and the patient is told to take a deep inspiration. During this inspiration the left thumb is made to slide from below upwards and outwards and from behind forwards. The edge of the liver should now slip past the thumb. The position of the left thumb, and if necessary of the right hand, must be shifted until the hepatic margin is discovered. It can be felt even when it lies above the costal margin.

FIG. 2.



The examination of the liver by the "procédé du po. ce." Step 3. (Glénard.)

During repeated acts of inspiration the lower border of the organ can be well examined. The left thumb is so deeply placed that the liver margin when it presents itself will come in front of that digit.

The purpose of this method of examination is simple. The loin is elevated by the left hand so that the liver may be pushed forwards and its lower margin brought nearer to the surface. By means of the right hand the intestinal mass on the right side of the abdomen is forced under the inferior surface of the liver, with the effect that the lower edge of the gland is tilted towards the anterior parietes and so made more accessible to examination. The act of inspiration forces the entire organ downwards and not only brings it well into the area of manipulation, but by imparting movement to it makes the sharp lower margin more easily recognisable.

It will be noticed that the left thumb—which Glénard calls the third hand—approaches the border of the liver from behind forwards and from below upwards. It is during expiration that the thumb takes up its position well in the depths of the hypochondrium, below and behind (i.e., deeper than) the track which will be taken by the edge of the liver when it descends.

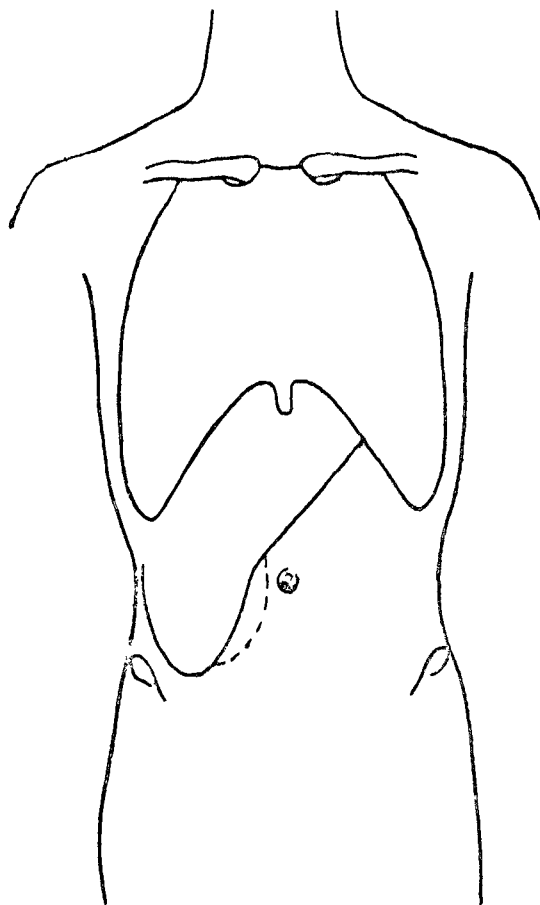
THE FLOATING LOBE.

I have already referred to this curious deformation of the liver. It takes the form of a tongue-shaped process which projects downwards from the right lobe of the liver. It is most usually derived from the right front part of the right lobe, but it may take its origin from the quadrate lobe to the left of the gall-bladder. The lower end of the "linguiform lobe" may easily reach the level of the iliac crest or extend into the iliac fossa (Fig. 3). A form of this liver appendage was figured by Cruveilhier in his "Anatomie Pathologique," published in 1842. The fullest account of the condition was, however, given by Riedel¹⁰ in 1888. His monograph is illustrated by eight diagrams showing various phases of the deformity. In recognition of his work the lobe—called by him the "tongue-shaped process"—is commonly referred to as "Riedel's lobe."

The linguiform lobe is very commonly associated with a

distended gall-bladder containing gall-stones. Such an association is shown in Cruveilhier's plate. Riedel assumes that the gall-bladder as it enlarges draws a tongue of liver with it. This tongue covers the gall-bladder wholly or

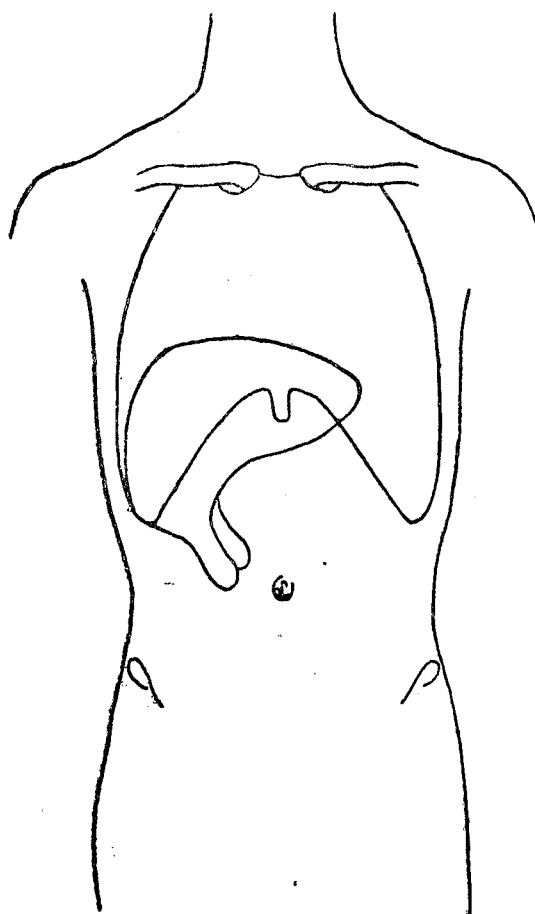
FIG. 3.



The floating lobe. (One of Riedel's cases.) The dotted line shows the gall-bladder.

partially. (See Fig. 4.) It has, moreover, been shown by Riedel and by Terrier that after cholecystotomy in such cases the floating lobe slowly retreats and in time vanishes. Probably all examples of a Riedel's lobe connected with the

FIG. 4.



The floating lobe. (Hellier's case.) Beneath the lobe is a distended gall-bladder.

¹⁰ Berliner Klinische Wochenschrift, 1888, No. 29 and No. 30.

lobus quadratus are dependent upon gall-stones. In many cases, however, in which the appendage arises from the right front of the right lobe the gall-bladder is found to be quite normal.

Some fibrous transformation is often to be noticed in these lobes, especially when they arise from the quadrate lobe or closely cover a distended gall-bladder. The lobe may be attached to the liver by a pedicle which may be quite thin. The appendix varies in size from a mere tongue-shaped slip of liver tissue to a mass measuring 20 centimetres by 10 centimetres as in a case reported by Pichevin.

The *clinical manifestations* of Riedel's lobe are of interest since in all the reported cases, with very few exceptions, an error in diagnosis has been made. A tumour is discovered in the upper part of the right side of the abdomen or in the right flank. This tumour may reach the median line on the one hand or may extend into the iliac fossa on the other. In a case of Langenbuch's in which the lobe arose to the left of the gall-bladder the tumour was exactly in the median line and extended from the xiphoid cartilage nearly to the umbilicus. The tumour is variously described as of the size of a kidney, as of the size of one or even of two fists, or as being four finger-breadths across. Its long axis is vertical and in an instance or so the tumour has been visible. It is solid and elastic and its surface is smooth. Its lower end, when in evidence, is usually very well defined and is often compared to the lower end of the kidney. In many cases it can be grasped between the fingers and thumb. The tumour moves on respiration, but not always very markedly. Its mobility is very conspicuous. It is capable in most cases of being pushed back or reduced towards the kidney. It never seems, however, to quite reach the renal hollow. Pressure on the loin from behind may make the lobe more prominent, especially when a moveable kidney exists at the same time. The tumour can also be, as a rule, displaced laterally and be made to reach the median line or to pass to the left of that line. In a case reported by Dr. Hellier¹¹ the mass could not only be pushed to the left side, but when the patient lay upon the left side the tumour extended to a point nearly three inches to the left of the navel (Fig. 4). More than one writer has described the mass as slipping away under the fingers but as being never reduced. The term "the floating lobe" is, therefore, well merited. In a few examples the mobility has been little marked or absent, and I think in all these instances adhesions existed. The tumour is repeatedly stated to be tender on manipulation. The upper limit of the tumour is indefinite. It is lost under the ribs or is felt to commence just below the costal margin and at least one writer speaks of the abdomen as being free between the tumour and the ribs. Among the recorded cases it is repeatedly stated that no connexion could be established between the tumour and the liver. The hepatic area of dullness is generally normal and only occasionally is it lower than usual. The more solid examples of Riedel's lobe are dull on percussion but the slenderer forms of this appendage are resonant all over. Such resonance depends upon the existence of intestine beneath the thin lobe and greatly adds to the difficulty in diagnosis.

It will be no matter of surprise that up to the present time the linguiform lobe has been seldom recognised during life or before operation. For example, Glénard has collected six recorded examples, in five of which laparotomy was performed and in one of which a necropsy was made. In no instance was the true condition recognised. In three cases the diagnosis of moveable kidney was made, in one no diagnosis was attempted, and the remaining two cases were believed to be examples respectively of a hydatid cyst and a new growth. In other instances the diagnosis of tumour of the omentum, of abscess, and of distended gall-bladder has been made. By far the commonest error, however, has been the mistaking of Riedel's lobe for a moveable kidney. I have met with four examples of this curious deformity, of which three cases were in the London Hospital and one case was in private practice. The patients were in each instance middle-aged women. In one case a moveable kidney was suspected which I was asked to suture. Feeling a little uncertain about the tumour I made an incision in the semi-lunar line and found a Riedel's lobe covering a gall-bladder containing stones. The kidney was very moveable. In a second case a linguiform lobe was suspected during an examination under ether. A distended gall-bladder containing gall-stones was found beneath the appendage. In a

third case there were symptoms of sub-hepatic inflammation of a chronic type. A tender swelling was discovered which was assumed to be wholly inflammatory. It proved to be an adherent Riedel's lobe. The gall-bladder was not involved. In the last case there had been relapsing perityphlitis and I was about to remove the appendix. Above the still tender appendix was a vague swelling which appeared elastic and which strongly suggested a large chronic abscess between the right iliac fossa and the liver. As it was for the most part resonant it was assumed to contain gas. Unfortunately for this diagnosis there was neither tenderness over the mass nor fever. The incision made over the appendix area exposed the lower end of a Riedel's lobe which was adherent. The gall-bladder was not involved. The diseased appendix was removed.

In many of the reported cases the floating lobe has been attended with subjective symptoms, such as pain, backache, nausea, constipation, dragging sensations, digestive disturbances, and the like. Some of the symptoms, and especially those attended with attacks of colic and jaundice, have been due to gall-stones. In other examples the troubles must be placed in the same category with those which are often associated with moveable kidney.

TREATMENT.

The medical management of ptosis of the liver calls for little comment and consists merely in the treatment of symptoms.

Dyspepsia is relieved by dieting and by drugs, constipation is attended to, a certain amount of rest is insisted upon, and such movements as cause discomfort are discontinued. Prominent among the measures which have been employed in ptosis of the liver are such methods of treatment for the relief of neurasthenia as happen to be in fashion at the time. Some writers have advised galvanism, probably because galvanism, as a therapeutic measure, has long been considered appropriate to obscure or hopeless disorders. It is difficult, however, to understand how any form of the electric current could cause a wandering liver to return tamely to its place under the ribs. Well-made belts are no doubt of very considerable service in the treatment of ptosis of the entire gland. Their use is much to be commended. Dr. Graham¹² has given an account of cases relieved by suitable supports.

The treatment by operation may be considered as it has been applied (1) to the floating lobe and (2) to ptosis of the whole gland.

In the operative treatment of the floating lobe three measures have been carried out: (1) the lobe has been excised; (2) the lobe has been sutured to the anterior abdominal wall; and (3) the distended gall-bladder, with which the condition is often associated, has been treated by cholecystotomy. Resection of the floating lobe has been carried out by Langenbuch¹³ and Bastianelli¹⁴ and cases of the suturing of this lobe to the parietes are reported by Billroth,¹⁵ Tscherning,¹⁶ and Langenbuch.¹⁷ In all these cases the patients were females; in all the abnormal lobe was encountered unexpectedly, and in all a cure followed. From one to four sutures were used to secure the lobe. The instances of cholecystotomy performed in cases in which a floating lobe existed are numerous.

The operative treatment of ptosis of the whole organ has consisted in the fixing of the organ in place by means of various schemes of suturing. To these measures the name of "hepatopexy" has been given. The first operation of this kind appears to have been performed by Gérard Marchant¹⁸ in 1891. He fixed the anterior border of the liver to the costal margin by four silk sutures. Langenbuch¹⁹ employed eight silk sutures in the same way. Richelot²⁰ used catgut sutures. In June, 1895,²¹ I secured a prolapsed liver in place by three silk sutures, the median of which took hold of the round ligament. The stitches were passed through the fibrous structures by the side of the xiphoid cartilage. Lanelongue²² bared the convex surface of the liver over a

¹² New York Medical Review, 1895.

¹³ Medicinisch-chirurgisches Centralblatt, Vienna, 1888, p. 231.

¹⁴ Il Polliclinico, 1895, p. 151.

¹⁵ Wiener Medicinische Wochenschrift, 1886, No. 14.

¹⁶ Centralblatt für Chirurgie, 1888, p. 426.

¹⁷ Deutsche Medicinische Wochenschrift, 1888, No. 29.

¹⁸ Académie de Médecine, August 11th, 1891.

¹⁹ Deutsche Medicinische Wochenschrift, 1891, p. 1241.

²⁰ Gazette Hebdomadaire de Médecine et de Chirurgie, 1893, p. 342.

²¹ Brit. Med. Jour., Jan. 4th, 1896.

²² Lanelongue and Faguet: Congrès de Bordeaux, 1895.

¹¹ Brit. Med. Jour., vol. i., 1895, p. 977.

space measuring six centimetres by three centimetres and then fixed the organ to the anterior abdominal wall by three catgut sutures. Péan²³ establishes below the liver a "*cloisonnement péritonéal horizontal*." The abdomen is opened by a transverse incision and by means of silk and catgut sutures the peritoneum of the anterior abdominal wall is united to that of the postero-lateral wall below the replaced liver. Leguen²¹ suspends the liver by a double thread which goes entirely through the substance of the gland. Francke²⁵ fixed the liver to the anterior abdominal wall by eight or nine sutures. No sutures are placed in the region of the gall-bladder. In the gap thus left iodoform gauze is introduced between the liver and the diaphragm and left in place for eight days. Substantial adhesions are said to be produced by this method. Depage²⁶ not only fixes the liver by sutures, but he dissects up extensive skin flaps from the front of the abdomen and attempts to reconstruct the abdominal wall. Terrier and Auvray²⁷ give abstracts of 15 examples of these operations with 11 cures, two deaths, and two uncertain results. So far as the surgical management of Riedel's lobe is concerned I think that the indications for operation do not go beyond the treatment of the distended gall-bladder with which this deformity is often associated. Cholecystotomy has been followed by the complete cure of the patient and the disappearance of the floating lobe.

I cannot see that there is any justification for the suturing of the lobe to the abdominal parietes, much less for the wholesale excision of the whole of the protruding part of the gland. It has never been shown that the mere existence of this lobe has *per se* caused any inconvenience or that its mobility has been a source of distress. Any nervous symptoms which co-exist are of a kind which would vanish after a simple exploratory incision and that circumstance probably explains the "cures" which have followed these uncouth measures.

With regard to the cases of complete ptosis much may be done by carefully applied and substantial support. Such support will probably need to be represented by something more elaborate than a belt. It may be desirable to hold up the relaxed abdominal wall by a thin metal plate taking its bearing from a pelvic band. The cases calling for operation are very few indeed. A ponderous organ like the liver cannot be efficiently supported by a few isolated sutures of silk or catgut. The operation can be needed only in extreme examples and in these a large nervous element will probably have to be reckoned with. Of the measures advised the most sound would appear to be that carried out by Francke. The sutures should be of silk and be passed well into the gland. The incision should be in the right semilunar line when possible. The rest in bed should be for from four to six weeks.

²³ Péan: Congrès de Chirurgie, Paris, October, 1896.

²⁴ Traité de Chirurgie, par Dentu et Delbet, vol. viii., p. 256.

²⁵ Centralblatt für Chirurgie, 1896, p. 776.

²⁶ De l'Intervention Chirurgique dans la Splachnoptose, Brussels, 1893.

²⁷ Revue de Chirurgie, 1897, p. 746.

LUNACY IN THE WEST OF ENGLAND.—The Cornwall County Council was recently informed that the asylum at Bodmin will have practically to be rebuilt to accommodate the increased number of patients. It has been notified to the Dorset County Council that the asylum in that county is also fast filling up and must be enlarged. The Plymouth Borough Council has recently decided upon an addition to the asylum at Blackadon to meet the growing demand upon its accommodation.

ROYAL MINERAL WATER HOSPITAL, BATH.—The annual meeting of the supporters of this institution was held on May 1st under the presidency of Colonel Vaughton-Dymock. The report stated that 1251 in-patients had been admitted during 1899, the daily average number in the hospital was 152, and the average stay of each patient was 44½ days. The financial statement showed that the expenditure amounted to £5879, which was higher than usual owing to considerable repairs and improvements having been made in the hospital; there was a favourable balance of £464 remaining. 20 beds have been placed at the disposal of the War Office authorities for the wounded soldiers, but up to the present only nine soldiers have been sent. Colonel Vaughton-Dymock was re-elected president.

The Milroy Lectures

ON

SUMMER DIARRHŒA,

WITH SPECIAL RELATION TO CAUSATION AND PREVENTION.

Delivered before the Royal College of Physicians of London on March 8th, 13th, and 15th, 1900,

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BARRISTER-AT-LAW, MEDICAL OFFICER OF HEALTH TO THE INNER AND MIDDLE TEMPLES AND TO THE PARISH OF ST. GEORGE-THE-MARTYR, SOUTHWARK, ETC.

LECTURE I.

Delivered on March 8th, 1900.

INTRODUCTORY.

MR. PRESIDENT AND GENTLEMEN,—For many years the high mortality due to diarrhœa has attracted attention in the study of preventive medicine. In England and Wales the number of deaths from this cause alone was 30,077 in 1898 and 31,069 in 1899; it caused 5·4 per cent. as against 12·6, the total mortality of the principal zymotics in 1898, and 5·3 out of 12 per cent. in 1899. On the whole the death-rate from that cause has maintained a steady average between the years 1847 and 1897. This persistence shows that the disease has not tended to lessen either in frequency or in virulence under the improved methods of modern public health administration. At the same time our knowledge of acute specific diarrhœa in the form which will be discussed in these lectures has been greatly extended—thanks chiefly to the late Dr. Ballard, whose researches were embodied in the classical report on the subject presented to the Local Government Board in 1889. Indeed, it may be said that since then workers in the same direction have done little beyond amplifying his inquiries and conclusions.

SYNONYMS OF DIARRHŒA.

The name most frequently applied to the malady is "diarrhœa." Many other terms are in use as set forth in the subjoined list. There is in addition to what may be called "bacterial diarrhœa"—that is, an acute malady due to bacterial agencies—a certain margin of cases included under diarrhœa where that condition is simply an accidental complication of some other disorder, as *tabes mesenterica*, measles, or chronic nephritis. This source of error is of little importance to the statistician on account of its general occurrence in all parts of the kingdom, whereby it affects but slightly any comparison between different places or the same place in different years. The headings of the following groups of synonyms sufficiently indicate the principles that have led to their adoption.

A.—1. Diarrhœa. 2. Summer diarrhœa. 3. Epidemic diarrhœa. 4. Acute diarrhœa; zymotic diarrhœa.

B. *Terms designating severe cases resembling somewhat true cholera.*—5. Choleraic diarrhœa. 6. English cholera. 7. Cholera nostras. 8. Cholera infantum or infantile cholera. 9. Cholera.

C. *With presence of bloody stools or tenesmus.*—10. Dysentery. 11. Dysenteric diarrhœa.

D. *With recognition of local inflammatory condition.*—12. Enteritis. 13. Gastro-enteritis. 14. Gastritis. 15. Muco-enteritis. 16. Intestinal catarrh. 17. Enteric catarrh. 18. Gastro-intestinal catarrh. 19. Gastro-enteric catarrh.

E. *Diarrhœa coupled with some ill-defined cause of death.*—20. Diarrhœa and atrophy. 21. Diarrhœa and asthenia. 22. Diarrhœa and debility. 23. Diarrhœa and marasmus. 24. Diarrhœa and want of breast milk. 25. Diarrhœa and vomiting. 26. Diarrhœa and sickness. 27. Diarrhœa and convulsions. 28. Diarrhœa and teething. 29. Diarrhœa and old age. 30. Diarrhœa and senile decay.

The instructions of the Registrar-General, quoted by Dr. Newsholme,¹ in classifying diarrhœal deaths are as follows: "Diarrhœa.—Deaths from *intestinal* or *enteric catarrh* and from *gastro-intestinal* or *gastro-enteric catarrh* should be included under this heading. Diarrhœa should, however, be

¹ Public Health, December, 1899, p. 143.