around them, and the pharynx should be examined for a reto-pharyngeal abscess. An abscess or sinus in any other situation of the neck will be noticed.

If the pain and stiffness have come on suddenly, or after exposure to cold, and if they be found to be relieved by heat and by gentle friction, and not to be worse at night, while gently raising or depressing the head on the spine does not give pain, it is probably *rheumatism*. The surgeon should then learn which active movements are most painful to the patient, and if he find that these very movements when passive are not painful, but that the opposites are, and if there be no sign of abscess, or protrusion of any of the cervical spines, this diagnosis will be established. The movements and manipulations must all be made without jar or shake, and in applying the test of the different effects of active and passive movements, the surgeon must be sure that the latter are really passive, and not partly active. If, for instance, a patient complain that he cannot actively extend the head without pain, but the surgeon finds that he can passively place the head in the extended position without pain, it demonstrates that the pain in the former case is not due to the position but to the agent, the muscle. Further, a muscle whose contraction is painful cannot be stretched without giving pain, and therefore when the head is well bent forwards so as to put these extensor muscles on the stretch, pain will be caused. The same phenomena are observed in the cases of "rheumatism" of the rotator muscles of the spine. When several muscles are affected some difficulty in diagnosis may be experienced, but with patience and care on the part of the surgeon, and docility and intelligence on the part of the patient, it is usually possible to come to a correct conclusion. In some cases great aid is afforded by observing the precise seat of pain and of tenderness,

and noticing that it is in the particular muscle contracting or stretched in the painful movements.

Where, however, the surgeon finds that the pain and rigidity have come on gradually, that the pain is worse at night, and is exaggerated by all movements; that pressure of the head down upon the spine gives pain, while raising the head relieves the pain or removes it altogether, he must diagnose *caries of the spine*. Should there be protrusion of the spine behind, swelling over the spine, or great local tenderness, or an abscess behind the pharynx or in the posterior triangle of the neck, the diagnosis will be rendered more easy and more certain. The surgeon should first try whether the simple nodding movement of the head is possible and painless; if so, it shows that the *occipito-atloid* joint is free from disease, while if any attempt at this movement causes great pain and great muscular spasm, while the other movements are more free, it indicates that this joint is diseased. If simple limited rotation of the head from side to side is painless, the *atlo-axoid* joint is not diseased, while if this movement, even to a small extent, is resisted, and is very painful, it points to disease of this articulation. When these two joints are found free from disease, but there is deformity or tenderness to vertical pressure and pain on carrying either nodding or rotation of the head beyond the degree possible in the two highest spinal joints, it shows that the disease is in the *lower cervical* vertebræ. Search should be made for evidence of syphilis in cervical caries. Retro-pharyngeal abscess must be regularly watched for in these cases. In disease high up in the cervical, swallowing a large morsel or taking a sudden deep inspiration may cause pain referred to the larynx or shoulder.

CHAPTER XXXII.

DIAGNOSIS OF DISEASES OF THE BREAST

THE importance and often the difficulty of the correct diagnosis of affections of the breast are so generally recognised that it is not needful to insist upon those facts here. It may be well to impress upon the student the necessity of bearing in mind the important physiological changes occurring in this gland. The earliest of these is the slight engorgement with consequent swelling, slight tenderness and induration, that may be observed a few days after birth, perhaps more marked in male than female children. In this state inflammation is readily set up by injudicious management, and abscesses may result. In girls at puberty (sometimes just before, but more often just after the first appearance of the menses) the gland usually undergoes a considerable but very variable degree of enlargement, the nipple develops and the areola becomes broader and better marked. The commencement of this change, particularly if it occur on one side earlier than on the other, may be mistaken for the development of a tumour, but a proper examination will exclude this error, and a consideration of the patient's age will at once suggest the true nature of the case, which will be further cleared up by time. At or soon after this period it is not uncommon to see acute suppuration under the skin of the areola or that covering the mamma proper. In males at this age there is often noticed an abortive development of the gland giving rise to a small, firm, disc-shaped swelling under the nipple, which may be a little tender to pressure. A knowledge of this fact

will prevent any error of diagnosis; the swelling is not always bilateral, and if bilateral not always symmetrical.

The full evolution of the gland only occurs during pregnancy and lactation, and is followed by a corresponding involution. The only one of these changes that requires mention here is the formation of small firm rounded nodules caused by the full development of the acini of the gland; the distinctness with which these are to be felt increases towards the end of pregnancy, and varies with the amount of fat around the lobules or under the skin. Simple tumours may originate at this period, but cancer very rarely. Occasionally abscess is met with in a lobe of the gland during pregnancy, as the writer recently saw in a patient under his care. During lactation inflammatory troubles and abscess become very frequent.

At the climacteric, the gland undergoes extensive involution, the acini become smaller, and eventually disappear. It is during this period of involution of the gland that cancerous tumours most frequently develop.

The examination of the breast should be conducted with the patient reclining upon a couch or seated on a chair before a good light, with the shoulders well supported. The surgeon should examine the parts in the following order: *nipple*, *areola*, *skin over the breast*, the *gland* itself, and then the *axillary glands*.

1. **Examine the nipple,** noticing its *size*, whether large, small, or rudimentary; its *shape*, whether prominent, flattened or retracted, and whether it is *bound down* to any part of the gland; its *surface*, whether inflamed, discharging, ulcerated or covered with scabs, or dotted over with firm bright specks; and whether there is any *discharge* from its ducts, milky, mucous, or bloody. If the shape of the nipple be abnormal, it should be enquired whether it is a

malformation or an acquired deformity; *malformations*, especially retraction and inversion, may cause obstruction to the outflow of milk, milk-congestion and mammary abscess; where *retraction* is acquired, it indicates a dragging upon the galactophorous ducts. Where there is discharge, care must be taken to determine whether it flow from the ducts which open on the top of the nipple, or exude from inflamed or ulcerated skin covering the ducts; this is decided by the presence of cracks or fissures, and by the effects of compression of the gland. Where the nipple is red, painful, very tender, and sero-purulent fluid is found exuding from cracks or fissures, the condition is known as *cracked nipple;* this is commonest at the tip and around the base of the part. When the watery discharge dries into thin yellowish scales, the skin beneath being red and itching, but not acutely painful and tender, it is *eczema of the nipple.* Small bright projections on the tip of the nipple are epithelial *plugs* in the *ducts;* these may be found in the form of small hard gritty *calculi.* A secretion from the lacteal ducts indicates some active secreting process in connection with the gland or its ducts, and the nature of the secretion should be noticed.

If in a patient at advanced or middle life there be on the nipple a chronic ulcer with firm thickened irregular edge, and an irregular indurated base discharging ichorous fluid, and if the induration and the ulceration steadily increase in area, while the glands in the axilla are enlarged and indurated, the disease is *epithelioma of the nipple.*

2. **Examine the areola.**—During pregnancy and lactation the large sebaceous glands in the skin may form quite marked projections from the surface; these must not be mistaken for pathological appearances. Any redness or swelling of the part is to be carefully

taken note of, as well as the presence of discharge or scales of any kind and the adhesion of the skin to a subjacent swelling. Sometimes *dilatations of the galactophorous ducts* can be recognised both by sight and touch as smooth soft pyriform swellings under the thin skin of this region. *Abscess, sebaceous cyst, hard chancre, mucous patch,* and *eczema* may be found in this situation.

3. **Examine the skin over the breast.**—Notice any change in its appearance, redness, discharge, scabs, œdema, retraction, fixity to the adjacent structures, and hyperæsthesia. Fixity of the skin to the breast is due either to inflammation or to some other infiltration, and in the absence of inflammation it is an important indication of the mode of growth and hence of the nature of a neoplasm. If the skin be red, discharging a watery fluid which stiffens linen and dries into yellowish scabs, the condition is *eczema.* If this disease have lasted for years in spite of all treatment, and have during that time slowly spread at its edges, but nowhere undergone cure, it is the particular form of disease which is prone to be followed by the development of a cancerous tumour in the subjacent gland; as the exact nature of the change in the skin is still a matter of dispute among pathologists, it is best known as *Paget's disease,* to distinguish it from the commoner and curable disease, *eczema.* Although attended with results so different from simple eczema, it is impossible to diagnose this serious disease except by its clinical course.

If the skin be swelled, bright red in colour, painful, very tender, and the swelled part fluctuate, and if there be no evidence of inflammation in the gland itself, the affection is a *supramammary abscess.* This may occur quite independently of lactation. The freedom of the gland from inflammation will be recognised by the moderate amount of pain and general

disturbance, the more rapid advance of the mischief to fluctuation or pointing, the superficial character of the swelling, and the absence of induration of the lobes of the gland.

If without redness of the skin or other signs of inflammation, gentle contact of the hand cause acute pain, there is *hyperæsthesia of the mamma*. If this tenderness involve the whole region, and if it be especially marked over the points of exit of the anterior and middle cutaneous nerves of the 2nd, 3rd, 4th, and 5th intercostal spaces, and if the pain radiate to the back and shoulder, it may be diagnosed as *neuralgia*. But if the pain be elicited by contact with certain spots only of the breast, and, further, if at these spots small, firm, round or ovoid tumours be felt movable under the skin and over the breast in one direction, pressure upon them causing acute pain radiating from them over the mamma, the tumours may be recognised as *neuromata*, and as the source of the hyperæsthesia.

4. **Examine the mammary gland.**—If the patient be suckling, and one lobe of the gland or the whole breast be found swelled, firm, with fine nodulation of the surface from distension of the glandular acini, the skin over it being freely movable, not reddened, with large blue veins coursing under it, and if the part be not acutely painful or tender, it is to be diagnosed as *milk congestion*. If the patient have suddenly stopped suckling, or the secretion be found to be thick, or the nipple be rudimentary, or inverted, or inflamed, or its ducts obstructed, this diagnosis will be confirmed and the condition explained. If unrelieved, the tension quickly excites acute inflammation, running on to suppuration; if there be fever, with or without rigors and sweating, acute throbbing pain, great tenderness and heat of the part, with redness of the skin and œdema which obscures the

exact outline of the swelling, even in the absence of fluctuation, *mammary abscess* may be diagnosed. The axillary glands, one or several, will be found enlarged and tender.

If the breast be prominent, the skin being stretched, and the nipple pointing, and if pressing the gland back against the chest cause pain and give a sensation as of fluid under the mamma, and particularly if there be swelling detected at the axillary border of the gland, which becomes more tense and prominent when the gland is pressed back, the diagnosis of *submammary abscess* should be made. This will be confirmed if there be enlargement of the axillary glands, and pain on bringing the pectoral muscle into action.

If both glands are found of an unusually large size, and steadily increasing in size, not painful nor inconvenient except from their bulk and weight, and of normal consistence and feel, the condition is *hypertrophy*. Remembering that without overstepping the limits of health, the breast attains a great size in some women, this diagnosis must only be made when the glands have attained enormous dimensions and are found to steadily increase for months or years. Two forms are to be recognised, in one of which the gland is very loose, soft, and pendulous, while in the other it is firmer, tenser, and projects forwards. Hypertrophy is generally bilateral, but not always symmetrical, and it is most common in young women, the growth starting at puberty.

If the surgeon can exclude these conditions, which are so obvious that no special directions for their diagnosis are required, he must next determine whether there be tumour or growth in, or in connection with, the gland. For this purpose he should stand behind the patient if she be seated, and press the fingers flat upon the breast towards the ribs, when he

will be able with certainty to determine whether there is anything more than the mammary gland over the chest. He must be careful not to grasp the gland between his finger and thumb, as in that way there may be a semblance of tumour where none really exists.

If there be no tumour, but, when grasped between the finger and thumb, the breast gives a greater sense of resistance than normal, and if such induration be felt in a patient not suckling, it is to be diagnosed as *chronic induration of the mamma.* This may be uniform, or affect only a part or parts of one or both glands; it is often associated with neuralgic pain and hyperæsthesia, and is commoner in sterile than in fruitful women, and especially between the ages of 25 and 40.

Tumours of the breast.—The surgeon should determine its relation to the gland by grasping the tumour in one hand, and the gland in the other, and trying if the one move independently of the other; he should then notice whether it is situated towards the centre or the periphery of the breast, and if its outline correspond to the mammary lobes and lobules. Tracing its surface with his finger, the surgeon should notice whether it is smooth, nodular or lobed, and particularly whether its edge is rounded, sharply marked off from the surrounding tissue or more or less ill-defined and gradually fading into them. Its consistence, whether hard, firm or soft and elastic, and whether fluctuation can be detected in it in all parts, or merely in some parts, will be determined, and the surgeon should then notice whether the skin be dimpled over it or adherent to it, whether the nipple is retracted and adherent to it, and the tumour fixed to or freely movable over the pectoral muscle. The fact of ulceration of the skin, and the character of such ulcer, will attract

attention. Enquiry should be made as to the existence of any discharge from the nipple, and as to the character of the fluid, whether milky, serous, bloody, or mucous. In reference to this symptom we may here pause to point out that a *discharge of milk* will generally be found only in association with the function of lactation; occurring, however, apart from that, and in association with a tumour, it is strong evidence of the glandular nature of such a growth. A thin *serous or bloody discharge* is frequently noticed in cases of cancer. A *discharge of mucous fluid*, whether clear, green, red or dark brown in colour, points to the presence of glandular cysts in the breast.

Having examined the breast, the surgeon will next carefully **explore the axilla** to determine whether there is any enlargement of the lymphatic glands, one or more, and if so, whether they are hard, matted together, adherent to the skin, the chest wall, or the axillary vessels and nerves, or ulcerated; and then he should pass his hand up to the neck and feel in the posterior triangle for any similar enlarged glands in that region. It is necessary to observe that unless care be exercised enlarged glands may be overlooked; and the writer has known them mistaken for the ribs, and *vice versâ*. Ordinary care and anatomical information should render impossible such an error. The skin over the breast and beyond it is sometimes specially affected, being beset more or less closely with firm nodules, which run together and form thick indurated plates over the chest, which may then ulcerate.

In regard to the history of the case, the first point to ascertain is the patient's age when the tumour was first noticed, and whether the patient was at that time pregnant or suckling, or whether the tumour followed a miscarriage, weaning, a blow, or

arose spontaneously, quite independently of any functional activity of the gland or of injury. Cancerous tumours are hardly known before the age of thirty, and they do not, as a rule, arise during pregnancy or lactation. They are, *par excellence*, the tumours associated with the involution of the gland. Milk cysts are only met with in connection with lactation; other forms of cysts are formations apparently as closely associated with middle and late life as is cancer; while the more benign tumour, fibroma, is met with in early life. Some chronic abscesses are especially met with following functional stimulation of the gland. The rate of growth is an important indication of the malignity or the reverse of the growth.

Lastly, it must be remarked that at present it is impossible, without microscopical examination, to distinguish between all pathological varieties of neoplasm, and that a careful consideration of all the facts may leave the surgeon in doubt as to the nature of a growth; in some of these cases an exploratory puncture may clear up the diagnosis. The tumours may be classified into those which fluctuate over their entire surface, those which fluctuate in places only, and those which are wholly solid.

The tumour fluctuates.

(1) If the swelling have arisen during pregnancy or lactation, be globular in outline, and uniform in consistence, without any signs of inflammation, it is a *galactocele* or *milk cyst.* These tumours are usually painless, and if allowed to remain until lactation ceases, they may undergo a little shrinkage from absorption of some of the liquid parts of the milk.

(2) A single ovoid or globular, wholly fluctuating tumour, not very tense, of slow painless growth, not yielding to pressure, or accompanied by a mucous discharge from the nipple, is probably a *serous or lymphatic cyst.*

(3) If the swelling be firmly fixed in the breast, occupying the periphery, and perhaps an entire lobe, somewhat uneven on the surface, and tense; and especially if there be a discharge of discoloured mucus from the nipple, or if such fluid escape when the swelling is compressed, it may be diagnosed as a *mucous cyst.* These cysts vary much in size, they may be very small, and then are frequently multiple, and are difficult to diagnose or even to detect; they do not become adherent to the skin or pectoral muscle, or cause retraction of the nipple or enlargement of the lymphatic glands.

(4) A slowly-growing globular, tense, fluctuating tumour, movable in the breast, may be an *hydatid cyst.* This diagnosis would only be rendered certain by an examination of its contents, and the detection of "daughter cysts," or hooklets.

(5) If the fluctuating swelling be attended with redness of the skin over it, or superficial œdema, and be surrounded with an ill-defined indurated margin, it is a *chronic abscess.* Of this there are two varieties. One is met with in strumous persons quite independently of functional activity of the gland, the abscesses having all the characters of *strumous* abscesses generally, and frequently being multiple. The other form occurs in connection with pregnancy, after miscarriage, or after weaning, and from the indurated wall and the obscurity of the fluctuation, the diagnosis may be very difficult; but whenever an ill-defined hard lump is met with in the breast after pregnancy or lactation, the probability of its being a small chronic abscess should be well considered; these abscesses also may be multiple.

The tumour fluctuates in places only, or is partly fluid and partly solid. In these cases the presence of the cyst or cysts is of only secondary importance, and the diagnosis rests mainly upon the characters of the solid portions of the growth.

(1) If the tumour be of small or moderate size, and of slow growth, it may be diagnosed as a *fibro-cystic tumour*. Such tumours may arise as mucous cysts, in which intracystic papillomatous growth has occurred, and when there is a history of a mucous discharge from the nipple, this will be the most probable diagnosis.

(2) If the tumour be of large size, of rapid growth, and infiltrate the breast, the skin over it being thinned, with large blue subcutaneous veins showing through it, it is a *cystic sarcoma*.

The tumour is solid throughout.—First determine whether the lump moves freely in the breast, under the skin and over the pectoral muscle; then notice its outline and consistence, whether the axillary glands are enlarged, and whether the skin is affected.

(1) If the tumour be freely movable in the breast and under the skin, with a clearly defined outline, and be firm and rounded, of slow painless growth, and the nipple and lymph glands are unaffected, it is a *chronic mammary tumour*. If occurring in a young woman it is a *fibroma*, while if met with about middle age, and preceded by a discharge from the nipple, it may be an *adenoma*, but this is a rare form of tumour. More than one of these tumours may be met with in the breast, and hence there may be an apparent recurrence after removal of the primary growth.

(2) If the tumour be freely movable over the breast and under the skin, and be soft, lobulated, with a shallow rounded smooth edge, and especially if the skin be dimpled over it, the surgeon will recognise a *lipoma*.

(3) If the tumour be freely movable under the skin and in the breast of great firmness, with a rounded lobulated or bossed outline, and if it be of very slow growth, it may be an *enchondroma*; but as this

neoplasm is only very rarely met with in the breast, the diagnosis between it and a firm fibroma will probably not be made before removal of the tumour.

(4) If the tumour be fixed in the breast, being immovable apart from the gland, be of great hardness, with somewhat ill-defined edge, of steady or rapid growth, and, if the tumour be of some size or situated towards the front of the mamma, if the skin be adherent to it and puckered in, or the nipple retracted, and one or more of the lymphatic glands in the axilla be enlarged and hard, it is a *scirrhous cancer*. As this is the variety of tumour of which the diagnosis is of most moment, it may be further pointed out what are the features to be specially recognised. (*a*) The first and most important of these is the *infiltrating mode of growth* of the tumour; beginning in the gland, it is from the first absolutely fixed in it and immovable apart from it, and as it enlarges it infiltrates and becomes fixed in a similar manner to the skin over it and to the chest muscles beneath it, but these latter phenomena are observed only when the tumour has reached a certain size. Whenever this characteristic is well marked, scirrhus must be diagnosed unless absolutely contraindicated.

(*b*) *Contraction* of the growth, leading to dragging upon the galactophorous ducts and retraction of the nipple, and also puckering in of the skin over the tumour; in some cases this feature is very marked, and is then very characteristic.

(*c*) *Glandular infection*, occurring early and very constantly. The affected glands, like the primary tumour, are hard and progressively enlarge. The glands are also found enlarged in acute and sometimes in chronic abscess.

(*d*) *Age*. The disease is scarcely known before thirty years of age, and commences most often during and after the climacteric period. In addition to these

four signs, which may be called the cardinal signs of scirrhus, there are other phenomena of less constant occurrence, but of equal diagnostic value when observed. Of these may be mentioned especially

(*e*) *Paget's disease of the skin.*—When a tumour is found in the breast associated with, and developed subsequently to, this form of chronic incurable eczema, it may with certainty be diagnosed as scirrhus.

(*f*) *Nodular growths in the skin.*—A diffused eruption of firm nodules in the skin, which run together and convert the skin of the breast and chest into a tough inelastic hide, is an eminently characteristic form of scirrhus.

(*g*) *Discharge from the nipple,* when associated with a wholly solid form of tumour, is said by Gross to be peculiar to cancer; it is a not infrequent symptom, the discharge being usually of a serous character, mixed with blood.

(*h*) *Ulceration* may be a striking feature, and the point to which attention should be directed is as to whether the skin is implicated in the growth before it breaks down, or whether, from pressure upon it, a portion of it sloughs, and on the separation of the slough the subjacent tumour fungates. This can be readily ascertained from the character of the edge of the ulcer. Where the edge is thin and not adherent to the fungating growth, it is certainly not cancerous; but where the edge of the ulcer is formed by infiltrated livid skin continuous with the ulcer it denotes that the growth is cancerous. The rapidity and extent with which ulceration occurs vary greatly in different cases.

(*i*) *De Morgan's spots.*—The late Mr. Campbell de Morgan pointed out the great frequency with which certain bright-red nævoid spots occur in the skin in cases of cancer; they are found in other circumstances, but are more frequent and more numerous

where cancer is developing; they are therefore of some slight value in diagnosis.

The facts in relation to heredity, pain and cachexia are not of a nature to aid materially in the diagnosis in cases otherwise obscure. Scirrhus occurs in the breast in several forms, and the following varieties at least can be clearly recognised:

(α) The *tuberous*, in which a distinct tumour is developed which grows steadily, and in which the progressive new formation is the most characteristic feature.

(β) The *ulcerative*, in which the growth quickly and widely ulcerates, often forming huge chasms.

(γ) The *cicatricial*, which is characterised by very slow growth, a prolonged course, and the very great contraction of the growth, which draws in towards itself all the surrounding parts, making a deep pucker in the breast or chest.

(δ) "*Scirrhe en cuirasse,*" in which the growth occurs mainly and widely in the skin, in the form of widely-scattered nodules, which spread and run together into an unyielding cuirass-like casing of the chest.

(5) If the tumour infiltrate the breast, be more or less globular in outline and soft in texture, of rapid and constant growth, forming adhesions to the skin, which quickly ulcerates, allowing the tumour to fungate, with early enlargement of the lymphatic glands, it is *encephaloid cancer.*

(6) If the tumour infiltrate the breast, grow steadily and perhaps very rapidly, if it be of globular, lobed, or irregular outline, not adherent to the skin or chest wall, and there be no enlargement of the lymphatic glands in the axilla, it is a *sarcoma.* The firmness and rapidity of growth of these tumours vary greatly; when of large size the skin over them ulcerates without being actually infiltrated by the neoplasm, and the edge of the ulcer is formed by thin undermined and adherent skin.

(7) If a soft tumour develop rapidly in the breast of a woman of about forty-five years of age, and do not become attached to the skin over it or to the chest wall, or infect the lymphatic glands, it is probably a *myxoma.*

CHAPTER XXXIII.

DIAGNOSIS OF DISEASES OF THE ABDOMINAL WALL.

While many of the diseases of the abdominal wall are readily recognised by the features common to them here and in other situations, others are peculiar to this region or present special difficulties in diagnosis, and require from us separate consideration. The first of these is a small group of *congenital malformations of the umbilicus*, of which *hernia* (*see* page 464) is the most common. A bright red fleshy wart-like growth at the umbilicus, presenting a smooth and vascular surface, is a *polypus or papilloma.* It commonly has a short central canal in it. Should the umbilicus be excoriated and a watery fluid escape from it, this is probably urine flowing through an *urachal fistula.* The detection of urea will at once determine that the fluid is urine. The urethra should then be examined for stricture. Congenital *fæcal biliary or gastric fistulæ* are sometimes met with. Where there is a direct communication between the skin and the intestine so that the mucous membrane is continuous with the skin, it is spoken of as an *artificial anus.* The surgeon will know by the reaction and appearance of the discharge what part of the alimentary canal is opened. Where a plastic operation for the cure of artificial anus is in contemplation the surgeon should look carefully for a

"spur" of the intestine, which projects into and sometimes blocks up the lumen of the tube. The "spur" should be carefully examined to ascertain whether there is a coil of intestine protruding behind it; this can be felt, or on manipulation a gurgle may be detected. A *fæcal fistula* may be met with in any part of the abdominal wall.

A simple *sinus* may be met with as the result of an abscess in the belly wall, or in the abdominal cavity; the history of the case and careful probing will determine the diagnosis.

Tumours of the abdominal wall are to be distinguished from tumours of the abdominal cavity by their mobility with the belly wall; abdominal tumours may be movable, but independently of the tissues over them: in some cases tumours beginning in the abdominal wall grow into the cavity and become adherent to the viscera, and it is important to recognise this condition. The most common tumours are *herniæ*, umbilical or ventral (*see* page 286); *lipoma*, *abscess*, and *epithelioma.* (*See* page 337.) *Epithelioma of the umbilicus* rapidly spreads into the peritoneal cavity and forms secondary growths in the omentum.

Abscess in the abdominal wall may be *superficial* or *deep*; the former is easily diagnosed by the fluctuation and the signs of acute inflammation. *Deep abscess* may form in the *sheath of the rectus* muscle or *underneath the muscular aponeuroses.* If a tumour with the signs of inflammation (pain, tenderness, heat, and redness) form in the belly wall, and its outline correspond to one of the divisions of the rectus muscle, it is an *abscess in the sheath* of this muscle; fluctuation is very difficult to obtain in acute abscess, and the induration and surrounding œdema are marked; in chronic abscess, induration and œdema are absent and fluctuation is more distinct. These abscesses are

to be distinguished from pointing intra-abdominal abscesses by the absence of an expansile impulse coughing, and by the entire irreducibility of the swelling by pressure. Great care is required to distinguish the thrusting impulse of all swellings in the abdominal wall from the increased tension and filling out of the tumour, which characterise fluid swellings of the cavity extending into the walls. The *subaponeurotic abscesses* can be distinguished from localised collections of pus in the peritoneal cavity only by operation; a previous history of fever is a point in favour of intraperitoneal suppuration.

CHAPTER XXXIV.

DIAGNOSIS OF CASES OF INTESTINAL OBSTRUCTION.

The first step in the investigation of cases of intestinal obstruction is to learn exactly the mode of onset of the symptoms, for such cases naturally group themselves into two classes, the *acute* and the *chronic*. In the one class, the patients state that having been in their usual good health, with regular performance of digestion and defæcation, they have been suddenly seized with pain in the belly, absolute constipation (not even flatus being passed), and vomiting, and the surgeon finds them in a state of more or less well-marked collapse; the most familiar example of such cases is afforded by a strangulated hernia, and they are well known as cases of *acute obstruction*. On the other hand, patients present themselves with a history of long-standing trouble with their bowels, constipation with or without diarrhœa at times, lessening size of the motions passed and increasing discomfort in the belly, at length culminating in complete obstruction (though often flatus is passed), inappetence, wasting, and vomiting; cases of cancer of the rectum afford the best example of this *chronic obstruction*. We must consider the diagnosis of these two classes of cases separately.

Acute intestinal obstruction. — Having arrived at the conclusion that the patient is suffering from *acute obstruction*, the first step in the diagnosis is to determine whether there is any *external hernia*. The usual and also the unusual seats of hernia must each and all be carefully examined with this view; and if a tumour be found, which is fixed to the belly-wall, tense, painful and tender, and dull on percussion, it is to be regarded as a *strangulated hernia*. Should the surgeon be in doubt as to whether a given swelling is a hernia or not, when there are symptoms of acute obstruction he should at once explore the nature of the swelling by operation. If no hernial tumour be detected, inquiry should be made as to whether the patient is the subject of a hernia which has been reduced, and if so, what relations as regards time the onset of the symptoms of obstruction had to the reduction of the hernia, and whether the reduction offered any difficulty. It must be remembered that a patient may himself accomplish a *reduction en bloc* of a hernia, and the author lately saw a case in which this had happened, although the patient had not noticed any difficulty whatever in the taxis. When, then, it is known that the patient is the subject of a reducible hernia, the ring and hernial canal should be very carefully explored, and it may even be justifiable to try to get the rupture to descend to make certain that it is not the seat of the obstruction.

If the surgeon is able to exclude altogether external hernia, the problem then is to distinguish between