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COURSE

OF

LECTURES ON PHYSIOLOGY AND SURGERY,

DELIVERED AT ST. GEORGE'S HOSPITAL,

BY JOHN HUNTER, F.R.S.

(From the Manuscript of Dr. Thomas Shute.)

LECTURE IX.

ABSCESS.

THE former lectures have been on the principles of surgery and their general application; the following will contain a more particular application of the principles to diseases. A ready application of the principles of the art constitutes a good surgeon. For the cure of diseases, it is necessary to understand the animal economy and the operations of the body under disease. It is also necessary to understand the structure of different parts, and in what manner they are affected when diseased. Different parts of the body are very differently affected when diseased, and give very different sensations. Therefore, the effects of a disease ought to be considered according to the structure of the part diseased. It is, therefore, not only necessary to understand the general economy of the constitution, but also the economy of its particular parts, to know how to treat diseases properly: for the difference of a disease in different parts arises from the difference of economy. But in specific diseases, as cancer, scrofula, venereal, &c., I think that every part is similarly affected, for the specific disease in such cases prevents the specific action of the parts; but in diseases arising from accident, the effect will be very different in different parts.

The parts of the body may be divided into those which are vigorous and have a strong disposition to heal, and those which have little power, a backwardness to inflame, and little tendency to heal; such as bone, ligament, tendon, and periosteum. Those parts which have the strongest power to heal, are cellular membrane, skin and muscle. When parts are injured whose powers are weak, all the parts which are near sympathize with them; therefore, in injuries of tendons, ligaments, fascia, &c., we have frequently considerable wasting of the limb. The same degree of mischief done to a part whose powers are strong, will produce no such effect; the part being capable of managing the disease, every other part performs its natural functions undisturbed. After violent strains there is frequently a wasting of the whole limb; every part of it being affected by sympathy, takes on the same indolent action as the part injured. The cellular membrane has the strongest disposition to heal; but this disposition is not the same in every part. When situated near parts whose powers are strong, as skin, or muscle, there it will heal quick; but in those parts whose powers are weak, the cellular

membrane situated near them partakes of the same disposition. The cellular membrane always partakes of the disposition of the parts to which it is near, therefore the same degree of disease will affect it differently in different parts. The disposition for healing is also great, in proportion to the nearness to the heart. Those parts of the body which have a backwardness to inflame, give different sensations in health and disease from other parts. This may be tried on the tendo Achillis, which gives a very different sensation when pinched than a muscle. When diseased, they give a heavy kind of pain, something like pinching.

Abscesses, from their different causes and effects, require very different treatment. Every inflammation producing suppuration, which is not on a surface, causes abscess. Abscesses may be divided into sound and unsound. Those which go through all their stages rapidly—inflammation, suppuration, ulceration, and healing, require little or no surgical treatment: these may be called sound. I call that a sound abscess where the constitution is healthy, and the abscess seated in a part which is sound and has strong powers for healing. In sound abscesses, as the ulceration advances towards the skin, it appears of a very florid red. Others, which are very backward to heal, performing their different stages slowly, may be called unsound. The first principle of treatment is to rouse the part, causing it to perform its operations quick; the quicker they are performed the better it will heal. Opening freely rouses the part very much, the stimulus of exposure causing it to endeavour to recover the skin. If it is not necessary to open freely, then the opening should be depending. The depending opening is to prevent any lodgment of matter, the pressure of matter retarding the cure.

A man who had a large abscess in his side, which extended over the ribs, was taken into St. George's Hospital; there was an opening at the top, through which the matter discharged itself. In examining it, the probe appeared to pass on the inside of the ribs into the chest: I resolved on doing nothing to it, fearing that I might kill the patient. The patient continued in this state for six months, when a fluctuation was felt at the bottom; the matter was coming through the skin at the part; I then opened it from one end to the other, and it healed.

In this case the pressure of the matter which lodged, was just sufficient to prevent granulation, but not enough to produce ulceration; at last it began to ulcerate at the bottom, and would have made an opening sufficiently large to have cured the patient; but that it might heal the quicker, it was opened from one end to the other. Sometimes abscesses take on an indolent disposition before they are cured, which we frequently see in old sore legs.

The cure of abscesses is frequently retarded from their situation. When an abscess is deep-seated,

the matter often makes its way to the surface by a small opening when compared to that which is the seat of the abscess; the external opening, taking on the disposition to heal very quick, almost closes, while the seat of the matter is very large; the matter continually passing through the orifice, prevents it closing quick, yet it is sufficiently small to retard the matter, which prevents it granulating at bottom; therefore, such abscesses are very apt to become fistulous. In such cases, invigorating applications ought to be applied to the bottom of the wound and to the external opening, such as retard its closing.

Further, to illustrate the disproportion which there is for healing between the bottom of an abscess and the canal through which the matter passes, it is to be considered that the bottom is the seat of the abscess, and consequently an unsound part, while the canal is a perfectly sound part, and only formed for the evacuation of matter. The bottom, therefore, being unsound, and the canal sound, the latter has a much stronger disposition for healing than the former. Deep-seated parts have not the same strong disposition for healing as those which are superficial; they remain easier under disease, therefore are apt to become indolent and remain fistulous. Many local diseases will be difficult of cure from the nature of the part, as tendon, fascia, bone, &c.; likewise from their situation being sometimes out of the reach of surgical treatment. A part of the same structure which is situated near the source of the circulation, will heal better than one that is distant. A very material distinction should be made between the treatment of a part which has a natural slowness to heal, and one that is acquired. Those parts which have a natural slowness to heal have but weak powers, little life. The power which they have, they will exert to the utmost, therefore they ought not to be stimulated to greater action, lest by that means the life of the part be destroyed, producing the sloughing of tendons and exfoliation of bones. They should be treated with soothing applications.

On the contrary, those parts which are naturally vigorous, but have acquired an indolence under disease, must be stimulated, to rouse them as much as possible.

Poultices applied to abscesses while they are suppurating, are of use in moistening the skin and soothing the part. Sores become indolent from long-continued exposure; when first they are exposed, they are very much stimulated to action; this stimulus gradually diminishes, and at last ceases from habit; therefore, when parts are to heal, we should hurry them on as fast as possible to do it, lest they should get into an indolent habit before the work is performed.

Unsound Abscess.

In order to cure a part which is difficult to heal, we should first attempt to find out the cause of its slowness; this sometimes is very difficult. The backwardness to heal may arise from indolence or irritability in the part.

I was sent for to a boy who had broken his shin; it had continued for three weeks, and had not healed at all, but had rather grown worse; when I saw it, the wound was very foul, and surrounded with inflammation. I suspected this might arise from an indolent cause, and therefore applied *basilicon* with precipitate for two or

three days, but found that it got worse, forming a thick white slough. I then inquired what kind of flesh the boy had to heal; if he scratched or cut himself, whether it healed quick or festered? The answer was the latter. I then applied a bread and milk poultice, with some opium, and the sore took on the healing disposition directly, and was soon well.

Indolent Abscess.

When a part is indolent, this may frequently be known by the cause. A slow and long continued stimulus will cause this frequently from pressure, as in the shoulders of draught horses and oxen, the knees of the camel, the tunica vaginalis in the hydrocele, and the cysts of encysted tumors. Thus a gradual pressure long continued will cause parts to grow thicker and indolent, not being so susceptible of injury as they were before. It appears rather extraordinary, that the same cause should produce such opposite effects, as the increase of a part or its destruction, for if the pressure is increased it produces ulceration.

Abscesses likewise are of two kinds; diffused and circumscribed.

Diffusion may arise from the parts near it being of the same nature, as in the cellular membrane, or from constitution.

Both the constitution and nature of the part will be a cause of the inflammation spreading. Parts of the same nature sympathize more strongly with each other than those which are different. The circumscribed nature of abscess is owing to the part having none near it of the same kind, as in a lymphatic gland; when there is an inflammation in it, there it is confined, not extending into the cellular membrane, nor does the skin partake of it or any of the neighbouring parts. When an abscess is unhealthy, the swelling is without pain, of a stony hardness, and exceeding slow in forming any fluid; when it is opened the fluid is glary, mixed with curdy matter, never forming good pus.

Slow swellings always become more hard than those which increase quickly. When these swellings suppurate, it seems to be more for want of life than from any exertion in them.

A woman, in St. George's Hospital, had a tumor in her side, which had been eight months in coming; when it was opened, it contained a fluid similar to that just described.

It will be much better to cure these swellings by resolution than suppuration, but a practice must be observed in these cases, contrary to that in healthy abscesses, for, instead of soothing the part, we are to stimulate.

The hardness in sound abscesses arises from the coagulable lymph extravasated in the cellular membrane, which will be taken up when the abscess is resolved; but in an unsound abscess it arises from an addition of the solids; therefore, to reduce the hardness more effectually, it will be better to cause ulceration by suppuration, which may be done by raising a violent inflammation in the part. Producing inflammation may alter the disposition.

Indolent abscess should not be opened soon, for if the hardness is not removed by the ulceration, it will not probably afterwards. When the hardness is gone the opening may be made, which should be very large, exposing the parts as much

as possible, not by a longitudinal incision only, but by crucial incisions; the more violence done the better it will heal, therefore scarifying the sides of the wound will frequently be useful. Although in these cases we are to increase the living powers as much as possible, and that is to be done by violence, yet such violence must be moderated, lest a mortification should be produced. By opening late, the contained matter acts as a stimulus, and may tend to produce the healthy inflammation. If the indolence of the part returns, which frequently happens, the granulations looking pale, glassy, and soft, with a black and ichorous discharge, the lips of the wound becoming thick, callous, and sometimes turning outward, then stimulating applications should be used; such as warm balsamics, precipitate, and tincture of myrrh; this last, when used, should be applied three or four times a day to produce much effect, because it soon becomes dry. Tincture of bark and a solution of lunar caustic are stimulating applications. If we want to heal quick in these cases, we ought to dress them three or four times a day. It is necessary, every now and then, to change the stimulant, because one, from being applied for a length of time, may lose its effect.

In indolent tumors, which produce a curdy matter, instead of an healthy suppuration, we ought to raise an inflammation by violence, to alter the disposition of the part, and produce good granulations. If we want to produce resolution, we ought to increase the powers of the part: that is, increase its action without raising an inflammation, which may be done by the use of mercury. Mercury increases the irritability of a part, and by that means disposes it to act. Fumigations with cinnabar may be applied to stimulate the parts—and fomentations of dried herbs which contain essential oil; poultices, with mustard seed, cumin seed, and the warm gums.

Circumscribed Abscess.

Circumscribed abscesses are more indolent than the diffused; they are generally in glandular parts, the inflammation not extending itself as in healthy abscesses. They are generally slow in suppurating, and are frequently very small.

They are seldom situated in the cellular membrane, and when they are, it is probable that they may be in some small gland, though none is perceptible in that part.

The surrounding parts are usually very little thickened, the cyst containing the matter is generally very thin, and they sympathize scarcely at all with the abscess; for the inflammation acting on a part dissimilar to those that surround it, extends no further; therefore, when a lymphatic gland is inflamed, the surrounding cellular membrane is not affected. But if suppuration should take place, then a new power being added, the surrounding parts will sympathise with it, and inflame as we see in a bubo.

Circumscribed abscesses are very common in lymphatic glands. They sometimes are very large, and will remain for years without suppurating, in an indolent state. These tumors are very different; sometimes they form a cheesy, curdy kind of matter, mixed with serum, and when opened, appear as if the substance of the part was melted down. At other times they are full of this curdy

kind of matter, containing a small quantity of serum in their centre. Others remain in an indolent state for a great length of time, and these, I think, have a tendency to cancer, therefore it is best to remove them entirely.

These swellings frequently occur in the necks of women. I dissected out one of these from the neck of a young woman, which extended deep among the vessels and nerves. I, therefore, was obliged first to dissect the jugular vein, the carotid artery, par vagum, and intercostal nerve, before I could remove the tumor. This patient died, and I think death may have happened from the inflammation of the jugular extending to the heart. The jugular was dissected so bare that it could not support itself, therefore it sloughed away.

Irritable Parts.

Those parts which are naturally irritable are nerves and vital parts. Other parts of the body are frequently irritable, arising from the constitution of the person, or from habit. Irritability of mind is usually accompanied with a similar disposition of the body. Irritability is seldom local, but constitutional.

Sometimes there appears to be a local irritability, for we have a part when injured very irritable, and another part of a similar structure in the same body not irritable, with the same degree of injury. It is just the reverse of indolence. It generally may be known by a quickness to inflame, without any disposition to termination; being very diffused, similar to the erysipelatous inflammation arising from weakness. The irritable inflammation continues increasing, appearing to have no crisis, contrary to the healthy inflammation, which soon terminates either in suppuration or resolution; however, it sometimes may be caused to suppurate, but this is very difficult.

In this inflammation there is a large extravasation, with very little coagulable lymph; it is very much diffused, and often the cellular membrane of the cutis is so loaded with serum, that it puts on the appearance of a part blistered before the cuticle is broke, having the same shining glassy appearance.

This inflammation often occurs at the extremities of the fingers and toes, terminating suddenly, and forming a distinct circular line, between the inflamed and uninfamed part. Many of these inflammations are not to be distinguished from the common, but may be known from the matter. If matter forms, they are certainly not the true erysipelatous inflammation, for in that matter never forms. The erysipelatous inflammation appears to be a specific disease, and not a deviation from other inflammations from some accidental cause.

The cure of parts which are irritable, is much more difficult than when indolent, as it is much easier to excite than assuage. It is much easier to put a man in a passion, than appease him when he is so. All the applications for cure ought to be such as give ease.

It will be better frequently in these cases to use caustics than the knife, to make an opening, for there is much less inflammation after the same degree of injury by caustic, than by a knife; a piece of skin of the size of a crown piece being removed by a cutting instrument, will inflame much more than if removed by caustic. If opium is added in the caustic, it will give less pain. All

the dressings in these cases should be applied cold, and be of the mildest kind; dry lint will sometimes inflame much; the epulotic cerate is a very good application; lapis calimarnis has nothing irritating in its properties. Opium is perhaps the best application to stop ulceration, which in those cases is very frequent. Bark should be given internally, which is particularly useful in removing irritability and restoring health.

ON THE BEST METHOD OF EXAMINING THE AUDITORY APPARATUS.

By P. MENIERE,

PHYSICIAN TO THE ROYAL DEAF AND DUMB INSTITUTION.

In this memoir I propose to examine with care the various means by which the medical man may arrive at a knowledge of the several diseases to which the organ of hearing is subject. Although the structure, position, and form of the ear present many obstacles to our diagnosis of its affections, yet the ignorance of the profession on diseases of the ear seems to depend, not so much on the real difficulties of the subject, as on the little attention which has been bestowed upon it. The great majority of medical men have never explored the meatus externus, or seen the membrana tympani in the living subject; how then can they understand the diseases which may occur in these parts, or still less discover those of the cavity and Eustachian tube?

Considerable experience at the deaf and dumb institution has convinced me, that if the surgeon desire to obtain fixed ideas on any disease of the ear, he must first carefully examine the affected organ, and determine every change that may have taken place in its form and texture. Most treatises on diseases of the ear contain a few scattered directions for examining the meatus, tympanum, cavity, and Eustachian tubes; but these directions, imperfect and incomplete as they are, seem to have been monopolised by the aurists, and neglected almost entirely by medical men.

I thought, therefore, that some benefit might result from collecting together the rules alluded to, and rendering them more complete; describing, in a word, the manner in which our senses should be applied to the study of the structure of the ear. This forms a necessary introduction to a still more delicate study, viz. the appreciation of symptoms.

Lobe of the ear.

The position of this part of the ear renders its examination comparatively easy; we must, however, bestow some attention on the folds of skin, underneath which certain cutaneous lesions may lie concealed. Chronic eczema, lichen, acne, &c., may occasionally attack this part of the ear, and escape our notice. The skin should be carefully examined, and its temperature noted, and we should also open out the folded parts, and see that no cutaneous eruption exists there, for similar affections may exist in the meatus and on the tympanum. In another paper I shall show that the lobe of the ear and integumentary covering of the meatus are subjected to most of the diseases of the skin. When we examine a great number

of individuals, whether they be deaf or hear perfectly well, we shall soon be convinced that the size, form, &c. of the lobe of the ear, exercise very little influence on the sense of hearing.

Meatus externus.

The parts which constitute the external ear, present a great variety of form and dimension; the length of the external meatus, its breadth and degree of inclination, vary, not only according to age, but to individual peculiarities. Sometimes a very remarkable difference will exist between two ears that are equally healthy, although, generally speaking, this want of symmetry depends on disease.

In some cases, the external meatus is sufficiently wide to allow of the tympanum being easily seen, but this is rare; in the great majority it will be necessary to employ an instrument for the purpose of dilating the canal. Authors usually advise us, when introducing the speculum auris, to seize the upper part of the lobe of the ear, and draw it outwards and upwards; in this way we can generally succeed, but in many cases it fails, from the great curve of the meatus, its narrowness, &c.

The orifice of the external meatus sometimes deviates, from a peculiar disposition of the meatus which runs downwards and forwards underneath the condyle of the lower jaw; here the use of a speculum is indispensable; or the antero-posterior diameter of the orifice may be so short, that its edges touch each, and appear like a simple slit, concealed by the tragus.

The external meatus, as we know, is composed of two parts, one external, formed of fibro-cartilage, the other internal, and constituted by an osseous plate of the temporal bone; the former is more or less flexible, and capable of being dilated; the latter not so. The degree of obliquity of the meatus depends on the angle formed by the junction of these two parts; hence it is evident, that to obtain a clear view of the tympanum, we should endeavour to bring these two parts into the same line, so as to let the light fall on the bottom of the meatus. For this purpose I place the patient on a chair, near a window, exposed to a bright light. I dispense with the use of any back piece or pillow, because we should have the power of turning the patient's head towards the rays of light; besides, the patient should have the liberty of withdrawing his head, when the separation of the blades of the speculum causes too much pain. The direct light of the sun is indispensable; English and German aurists employ lamps with reflectors, but the artificial light is less manageable; when we are compelled to have recourse to it, I find that a single candle is preferable; the candle may be held in one hand, and the light reflected from a silver spoon on the sides of the speculum; with a little practice, we soon acquire a knowledge of the required inclination.

The lobe of the ear being drawn upwards and backwards with the left hand, the speculum is passed into the meatus to the depth of about five or six lines, according to the length of the soft portion of the conduit. Here the instrument generally stops, but it may pass on a little further into the osseous portion. In most cases, however, the soft parts form a truncated cone, the top of which corresponds to the edge of the bony canal, and beyond this the instrument cannot ac