

LECTURES
ON THE
PRINCIPLES AND PRACTICE
OF PHYSIC,
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LECTURE 13.

HAVING, in the preceding lecture, explained the symptoms, morbid appearances, and treatment of inflammation, seated in different portions of the mucous membranes of the air passages, I shall speak, in this lecture, of that affection which, existing lower down, has been by most recent authors called

Bronchitis.

This inflammation, however, has been designated by different names; by the old writers it was called *Peripneumonia notha*, when acute, and when chronic in old persons the *Catarrhus senilis*, or Humeral Asthma. Yet whatever changes may be rung upon such words, there is an intimate connexion between the acute and chronic forms, which very frequently pass or repass to each other. It frequently happens that an acute inflammation supervenes on a long standing chronic one of the bronchial lining. For example, an old man may go about coughing through the summer and autumn nearly all the day long, and expectorating freely; but when the winter comes he is seized with an inflammation of a more acute kind, and if not attentively watched might sink under its influence. In the investigation of such cases you should ascertain the following points, 1. The circumstances connected with the origin of the disorder; 2. The circumstances connected with the progress; and 3. The present state of that disorder.

It is a great mistake to suppose with some of the old writers that this disorder is confined to adults in a great measure. The truth is, that children are very liable to its attack. I before mentioned that the skin and mucous membranes of infants and children are remarkably delicate and predisposed to inflammation. This predisposition is frequently strengthened by an *here-*

ditary tendency, for the children of some families are more predisposed than those of others. The predisposition is sometimes such as I have before described under the title of *ætal*. Sometimes the predisposition is *sexual*; the organs of voice undergoing a remarkable change about the period of puberty, occasionally become predisposed at that period. Lastly, this tendency to inflammation of the mucous membranes of the air passages is *acquired*, through the influence of habits, operating from infancy, through the middle period of life, up to old age. In adults it often happens that irritation set up in the alimentary canal, with disordered functions of the skin, frequently predisposes to inflammation of this mucous membrane. There is a remarkable sympathy between the skin and internal mucous membranes. Debility is also a powerfully predisposing cause.

Exciting causes of Bronchitis.

With respect to the exciting causes of bronchitis, the principal one is a low or variable temperature of atmosphere. It prevails most in low damp weather. Sometimes the cause is *epidemic*, a certain state of *atmosphere* extending over a certain district; or it may be *endemic*, confining its influence to a particular spot, or even to a particular house. Wherever you find the general or local taints of atmosphere, the mucous membranes are the parts which become affected when fever arises. The same applies to contagion generated in the human body, which being given off from one is very liable to affect another in the same manner, chiefly operating on the internal mucous membranes. There is greater prostration of strength generally attendant on bronchitis arising from an epidemic state of the atmosphere than when it arises from a low and variable temperature of the atmosphere, or in other words a common cause.

Symptoms of Common Bronchitis.

I would premise that you must distinguish this inflammation from inflammation of the substance of the lung and pleura, for the treatment, in some respects, is remarkably different. Structure modifies very much the pathology of diseases, and consequently their treatment.

The following are the symptoms which you must attend to combinedly, as the most characteristic of common bronchitis, acute or sub-acute. There is, 1. More or less disturbance in the respiration. The number of respirations in the healthy adult ranges from 16 to 20 in a minute. In acute or sub-acute bronchitis, the number is often from 30 to 40. The number is not only greater than natural, but the respiration is also more laborious than natural; the inspirations and expirations are made with a more obvious effort, the chest heaving up and down much more than in the healthy condition.

2. There is more or less mucus in the bronchial passages. If you direct the patient to take a deep inspiration, and if you hold your ear close to his mouth, you will hear a guggling, wheezing, rattling, or purring noise, and that noise appears very deeply seated, as if occasioned by the air passing through the mucus in the bronchial passages themselves. If you direct the patient to cough, you can hear the same noise still more distinctly, deep and stuffing. If you apply the instrument of LAENNEC, you will hear a diffused, mucous, loose sort of guggle. But in my next lecture I shall speak of its application in the diagnosis of affections of the chest.

3. There is a cough attended by that loose, diffused, mucous, deep, stuffing noise above mentioned. The quantity of mucus is sometimes exceedingly great, and the patient struggles with an occasional, feeble and ineffectual cough, while in the worst cases the cough is entirely absent, the patient being so weak that he cannot cough at all, and then the breathing is short and frequent. When a patient has a deep sweeping cough he is not in so much danger, for then he is able to expel the mucus from the air passages, the great accumulation of which produces suffocation.

4. Symptom is the expectoration. But recollect that I am now giving the symptoms which are the most frequent in common bronchitis. There is an expectoration of mucus or of a muco-purulent fluid. In the slighter cases the mucus is transparent or mixed with froth. In the severe cases it is opaque, and often appears in

yellow broad patches. When these patches are expectorated into a vessel, they run together, being in consistence somewhat like the white and yolk of an egg, mixed together by a spoon, but in appearance more like the mucilage of gum arabic. The danger or the safety of the patient turns upon the balance between the quantity of mucus secreted and the quantity of mucus expectorated. If the quantity secreted be greater than what is expectorated, then the danger is greater; but if the patient have a deep sweeping cough, then the danger is less. But in the very worst cases the cough is ineffectual as to the expulsion of mucus.

5. There is a leaden, or violet, or purple colour of the lips. The cause of this is the accumulation of the mucus in the air passages preventing the decarbonization or oxygenation of the blood in the lungs, and, consequently, a darker coloured blood circulates throughout the body, and is most observable in the capillary vessels of the lip and cheek.

6. There is a purplish hue of the cheek, or a pallidity mixed with livor. If the countenance were florid in health, it will be purplish in this affection; but if the face were pale in health, there will be a paleness mixed up with the livor, or leaden sort of pallidity. It is very remarkably displayed in infants, for when they are attacked with bronchitis, the paleness and livor are always blended together on the cheek, for you know their cheeks are blanched in health. Sometimes this appearance is to be found in other parts of the body, but most frequently in the lip and cheek. But when arterial blood becomes impeded in its circulation in health, it assumes the venous character, thus you may see many persons who have a purplish colour of the hands and face when exposed to a low temperature without a bronchial affection. This has been noticed in one of our popular ballads, where it is said:

“ Why do you shiver and shake, Gaffer Gray?

And why does your nose look so blue?
The weather is cold, and I'm growing old,

And my doublet is not very new.

Well-a-day!”

Once more I must remind you of the necessity of marking the conjunction of the symptoms in all cases.

7. The heat is generally moderate on the surface of the body, but sometimes high, especially in children.

8. Compared with that attendant on inflammation of serous membranes, the pulse is soft. But if the heat be high on the surface, the pulse is generally expanded and quick; but if the heat of the surface be moderate or low, the pulse is almost always soft and compressible.

9. There is considerable prostration of the muscular power, and this prostration is greatest when the accumulation of mucus in the bronchial passages is greatest.

10. There is, in the progress of most cases, heaviness, aching, or giddiness in the head. Now if you remember the combination of symptoms which I have now pointed out, you need never be at a loss to distinguish common bronchitis, in which also there is an absence of pain, even on deep inspiration. There are two ways in which the brain may be influenced in bronchitis, mechanically and chemically, as I before explained in the pathology of common congestive fever. But there is another mode in which the brain becomes implicated in this affection, it is by the excitement of the heart's action in coughing. Again, you must also recollect that the pain influences very materially the lungs through the medium of the eighth pair of nerves; and this fact affords a strong argument in favour of the nerves being the conductors of some subtle fluid, as conjectured by Galen. But whenever the lungs become embarrassed, the heart participates very soon, the blood being impeded in its transmission from the right ventricle.

Death occurs in the same way, in inflammation of the mucous membrane of the bronchia, as it does in drowning, but more slowly. Some of these cases, in the extreme form, however, are very sudden. An old man goes out in a cold winter's day, he is seized with a difficulty of breathing, falls into a state of torpor, and dies, perhaps without having any cough at all, in twenty-four hours. An infant is taken out in a very cold day in the nurse's arms, and is chilled; the lips

become purple, leaden, or violet, the cheek pallid and leaden in its hue, and the child dies in a very short time. Generally speaking, the cases are certainly more protracted, continuing for one, two, and sometimes three weeks, or even longer. I have examined the bodies of several patients who died from this affection, and in all the most decided evidences of inflammation of the mucous membrane of the bronchia were found, quite sufficient indeed to account for the death.

Morbid Anatomy.

On laying open the chest, a man unacquainted with pathological anatomy, would say, there are no signs of inflammation here, nothing peculiar. Nevertheless there are many morbid changes to be found by those who know where to seek for them. The right side of the heart and large adjacent vessels are generally much gorged. The blood sometimes remains a fluid gore, and does not coagulate, from the change which it has undergone in its constitution. Having examined the state of the heart and large vessels, you should next examine the bronchial membrane itself, the surface of which is covered with mucus accumulated, and if you wipe that off by a sponge, you would find the membrane highly injected, and generally a dark colour, which soon becomes more red on being exposed to the air when the mucous secretion is removed. The substance of the lung itself is gorged with venous and arterial blood. If you press the end of the finger upon the part most affected, a pit will follow the impression. If you slice the portion of lung, and squeeze the divided portions, a mucus, or muco-purulent fluid will issue out from the cut surfaces, similar to that contained in the bronchial passages. The brain is generally found more or less congested, and in many cases, you will find traces of inflammation on the mucous lining of the small intestines.

Diagnostic Symptoms.

If you attend to the following observations you may distinguish inflammation of the bronchial membrane from

inflammation of the substance of the lung, or of the pleura. Some persons will tell you that it is impossible to distinguish these affections, and some years since I thought it could not be done distinctly in all cases; but I am now convinced that it is at least easy, for any man who takes the trouble to investigate minutely, to discriminate one from the other. Such exactness however is only to be obtained by repeated and laborious observation. Let us begin with the cough, and contrast it in these and some other affections. Attending, I say, *first* to the *Cough*: the sound accompanying coughs is very remarkably different. In the most intense form of inflammation of the larynx, the patient when he attempts to cough, makes a low, grumbling, grunting, suffocating noise. In *Croup*, when the inflammation is seated in the membrane lining the trachea and some parts of the larynx, there is a harsh, brazen, clanging cough. Whereas in *Bronchitis*, you have a loose, deep, diffused, stuffing cough, having the peculiar sound which LAENNEC has called the *Mucous guggle*. Again, in inflammation of the substance of the lungs, the cough is entirely different; it is a harsh, shrill, metallic sort of noise, deep within the chest, limited to the inflamed portion of lung. In inflammation of the *pleura*, the cough is hard, short, and generally dry at first. Therefore, from the nature of the cough alone, I should say that a man of minute observation might tell whether the inflammation were seated in the larynx, trachea, bronchial membrane, lungs, or pleura.

The *second* point to attend to is the *Expectoration*. The quantity and kind of expectoration will be found to be remarkably different in these different affections. When patients do expectorate in bronchitis, the expectoration is loose, mucilaginous, and copious. In inflammation of the substance of the lungs, it is very scanty and tenacious; spit up in small patches, almost like glue. In pleuritis there is generally no expectoration at all, or it is scanty, transparent, and somewhat frothy.

The *third* guide to be noticed at the attack and progress of common bronchitis, is the purring, wheezing, rattling noise, which you may detect ei-

ther on hearing the patient cough or by applying the instrument of LAENNEC. In the *fourth* place, the colour of the lips and cheek undergo a change, more remarkable in the onset of this affection than in the onset of inflammation of the pleura or lungs. *Fifthly*, the absence of pain on a deep inspiration. In pure bronchitis the patient can take the deepest inspiration without feeling any pain, but in general he cannot do so in inflammation of the substance of the lungs or pleura. The prostration of strength in bronchitis is also generally more marked in the beginning, and the head is more apt to be affected in its progress. If I am at all right in my remarks, it is of the utmost importance to distinguish bronchitis from inflammation of the substance of the lung and pleura. Judging from the results of my own experience and from the results of the practice of those who adopt the same treatment in bronchitis as they do in pneumonia or pleuritis, I would say, that the want of such discrimination often causes the loss of life. CULLEN, who paid but little attention to morbid anatomy, and who therefore was ill qualified to lay down lines of distinction, has mixed up the symptoms of inflammation of the lungs with the symptoms of bronchitis. It is my duty to caution you against false opinions, since they necessarily lead to an erroneous practice. One of the ancients said, that a man should above all things respect himself. But a medical man should above all things respect truth; it is his first, his last, his only authority in the application of his art. Exercise your own common sense always with perfect independence, and you will find its application to physic more useful than that elaborate learning upon which some men so weakly and vainly erect their imaginary superiority over those who attach more importance to the study of nature, the phenomena of which are at once so minute and so extensive.

Treatment of Bronchitis.

Bloodletting you would suppose is the principal remedy, but if you were called to a patient labouring under bronchitis, and were to proceed on the broad principle, that the affection is inflammatory, and, therefore, requir-

ed copious or repeated bleeding, you would be most extremely unsuccessful in your practice. I have been called to a great many patients who, having been thus bled, sunk with great rapidity after the operation. As I shall feel it necessary to recommend the prompt and decisive use of the lancet in some inflammatory affections, so I now consider it incumbent to caution you against its indiscriminate employment, especially as the junior members of the profession are apt to be taken by a bold practice. But though there are some cases which require such a practice, there are others in which two, or three, or four ounces of blood would answer far better; and some again in which the abstraction of this small quantity would do harm. Learn to vary the treatment according to the existing circumstances.

Bronchitis is one of the affections which demands the greatest discrimination as to the use of bloodletting. If you were to bleed an infant, or an aged person, labouring under this affection to approaching syncope, he would rarely recover. I speak from my own observation, determined not to be led by any human being. You must, in like manner, put my opinions to the test of your own observation, and follow them no further than the facts confirm their accuracy. Make physic a personal study. If a man would only mark the progress of his own mind, he must be convinced that every year adds more and more to his information, for he must still be a student. There is nothing in the practice of physic so necessary as minute investigation; upon that depends the precise application of remedies.

The rule for bleeding in bronchitis which I have deduced from observation, is this:—if the heat be high on the surface of the body, and the pulse full and expanded, or contracted and resisting, you may bleed *moderately* with advantage at the outset of the affection. But if, on the other hand, the heat on the surface be not high, and the pulse at the same time is soft and compressible, do not bleed at all. I can assert most truly, that since I have attended to this rule, my practice has been much more successful than before. When bloodletting is

carried to a great extent, prostration of strength follows; the muscles employed in respiration cannot perform their functions, and the patient sinks speedily from an accumulation of mucus in the bronchia.

It appears to me that inflammation of the mucous membrane of the bronchia generally has a determinate duration. You may at once stop the progress of inflammation in serous membranes by bloodletting and other active means, but not so in inflammation of the mucous membranes. This inflammation, I repeat generally, has a certain duration; and in common bronchitis all the good that you can do by bloodletting is to lessen its violence, for its natural cure is the secretion and expectoration of mucus. For want of considering this simple fact, namely, that inflammations of the mucous membranes mostly have a determinate duration, I have witnessed the most disastrous results; I have known patients bled day after day until they sank rather from the influence of the measures than from the disorder. If an infant require bleeding in this affection you must employ leeches, but in applying them, be sure to avoid exposure of the chest, which always aggravates the bronchial affection considerably.

The *second* measure in the treatment of this affection, is the exhibition of *aperients*. It is a very curious law in the animal body, that a disorder seated in one part, may be removed by operating on another and distant part. To illustrate this influence I will mention the following case. I saw a lady, soon after her delivery, for a very slight complaint; she merely had a superabundance of milk; but she was attacked with a prevailing disorder, a purging of mucus, streaked with blood, and the secretion from the breasts immediately ceased. There is also a very intimate connexion or sympathy between the skin and kidneys; when the function of the one becomes impaired, the other appears to supply the deficiency by an increased secretion; I might mention to you, as a proof of this, a case of *diabetes* which lately fell under my notice: a patient passed about nine quarts of urine in the course of the day, I recommended the use of the vapour bath;

removed some causes of irritation to the mucous membrane of the stomach and bowels, and afterwards ordered a bland animal diet, and in about a week the quantity voided was reduced to two quarts, chiefly however through the influence of the vapour bath.

No medicines have so decided an effect, in the removal of bronchitis, as those which act simultaneously on the bowels and skin. You should give cold-drawn castor oil, an infusion of senna, with small doses of the sulphate of magnesia and colchicum. Whilst the heat is high on the surface of the body, you may usually give such a draught as the following, two or three times in the day, with great benefit:

<i>Infusion of Senna</i>	ʒiiss.
<i>Sulphate of Magnesia</i>	ʒi.
<i>Manna</i>	ʒi.
<i>Powdered Colchicum</i>	gr. v.

When, however, the heat is not high on the skin, then small doses of calomel, with rhubarb, followed by cold-drawn castor oil, will be the best medicines, omitting the calomel when the fever abates, lest ptyalism be induced. A third means is the exhibition of *diaphoretics*, among the best of which are tepid drinks, and a regulated temperature. The temperature of the room should never be lower than 60, or higher than 66. Never produce sweating by a high temperature; for, if you do, the superfluous heat will occasion more mischief than the perspiration can probably counteract. A high temperature excites the heart's action, and increases thereby the original malady. Give, for the purpose of soliciting the secretion from the skin, some such medicines as the following: about two drachms of the liquor ammoniæ acetatis, and five drops of the antimonial wine, with two, three, or four drops of laudanum every four, five, or six hours. When these do not succeed, the tepid bath, provided the patient be not too weak, is an excellent auxiliary. Some friends of mine are in the habit of giving nauseating medicines, and certainly they sometimes appear to do good by promoting expectoration and perspiration; but when individuals, whether old or young, have to struggle a long

time with disease, you must keep their stomachs in good order.

A *fourth* thing to be observed is, that the patient should be kept perfectly at rest in bed. This position calms the pulse, and the uniform temperature produced by the bed-clothing acts very favourably on the skin, increasing at all events the insensible perspiration, indeed often causing diaphoresis.

Fifthly, the diet should be bland and spare, especially whilst the heat of the skin is higher than natural and the pulse expanded. But do not carry your spare diet too far, for if you abstract all stimulants from persons advanced in life, who have been accustomed to them, you would generally be unsuccessful.

Sixthly, the application of a small blister is sometimes useful. But you must be very careful how you apply blisters when the strength is much broken up, especially to young children, who have sensitive skins. I have seen many instances where children have been lost by the sloughing and irritation occasioned by a blister. You should generally avoid blisters in the fevers of infancy for the above reason.

In the *seventh* place, stimulants are now and then necessary. It sometimes happens, in the progress of bronchitis, that the patient becomes exceedingly weak, the skin cool, the head grows more and more heavy, the chin at last drops upon the breast, he rattles more in his breathing, and he expectorates less and less. A little *carbonate of ammonia*, given repeatedly in some almond milk, will frequently in such cases save the patient's life. Small quantities of æther, or, upon an emergency, small doses of hot wine and water will answer the same ends. The danger in this affection is from the accumulation of mucus, and if the patient be able to expectorate, and if you do not do too much, he will generally get well, by rest, regulated temperature, spare diet, or gentle action on the bowels and skin at the same time. Never forget that this affection has a determinate duration.

Persons who have had attacks of bronchitis are very apt to have relapses, and therefore in infants and old

persons particularly, you should, to their relations, clearly explain the remote occasions, that future attacks, if possible, might be prevented. Bronchitis is an affection which very often attacks infants and children; yet if any one were to tell certain professors or censors of the good old school, that peripneumonia notha was very common in infancy or childhood, they certainly would reject him as unworthy of their honors. No honest man would care a fillip of the finger for what such persons might think, aye, or say; but participating in the spirit of the age, he would independently uphold opinions which are supported by the evidence of facts, however they might contradict the current creeds of fiction.

I have now given you a view of bronchitis arising from *common* causes only, but it admits of a much wider pathological and practical application. If a person have an extensive burn, or compound fracture, and die; or if he undergo a capital operation, and die soon afterwards; you will very frequently find, if you attend to the symptoms and morbid appearances, that he died partly from a supervening bronchitis. The erysipelas of hospitals generally terminates fatally from the occurrence of internal inflammation, and that internal inflammation is always seated in the bronchia, whatever parts else may suffer; at least, I have never seen a body examined after death in which this was not the case. When this affection follows burns, compound fractures, and so on, the accompanying fever mostly assumes a typhoid character, especially if the patient breathe a close or tainted air; for the mucous secretion prevents the decarbonization of the blood. The quantity expectorated is not in proportion to the quantity of mucus secreted. There is, at the same time, in typhoid and typhous fevers, a sticky kind of varnish secreted which prevents the proper changes of the blood in the lungs, more from its constitution than its quantity, which indeed is less than in common bronchitis. All low, putrid, malignant, typhous, or adynamic fevers, as the French now call them, principally owe their peculiarity of the low, putrid, or malignant type from the presence of a

special bronchitis, attended by a low degree of heat, a soft pulse, a brown varnished tongue, and an injected state of the bronchial lining, which is so besmeared by an adhesive secretion, that the blood does not undergo the natural change. I have ascertained this fact from repeated dissections, a fact which is not well understood in this and other countries; but in speaking of such fevers, I shall clearly illustrate its great importance, and point out a method of treatment by which the mortality of such affections may be greatly lessened, compared with the results of the older authors.

REVIEW.

Commentaries on Diseases of the Stomach and Bowels of Children. By ROBLEY DUNGLISON, M.D. &c. &c. *ad duodecimum gradum.* London. 1824. pp. 201.

CRESKIT *multa damnosa papyro*—the foolish appendices to our author's name would fill a page of our Journal. For be it known to our readers, that Dr. Dunglison, all simpleton as he would appear, has, somewhat after the manner of his prototype, Syntax, taken a tour in search of the picturesque—has crossed the channel to visit our neighbours the French, the Gardens of Tivoli, and the Faubourx of St. Germain—the academic groves of Marseilles and Erlangen—like the monkey who had seen the world, “to bring politer manners home.” He has also imported with him a few articles of foreign manufacture, for the construction of the present volume, some of which are blazoned in his title page, and the remainder occupy two or