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On Medical Diagnosis.

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Medical diagnosis, from the deceptiveness of symptoms, the uncertainty of signs and the unexpected complications of diseases springing from a great variety of causes and acting on the ever-varying peculiarities of individual constitution, is far from having attained to that precision and certainty which all who have the highest interest of the profession at heart are desirous of accomplishing. There is not only a broad margin left in the text-book of this important part of our profession for the noting of original observations but entire pages and even sections (e.g. Diseases of the Nervous System) present blanks which, at least in the meantime must be supplied with varying success by induction or deduction, hypothesis or theory. Nor is this altogether to be condemned. It is a bias in the domain of minds not of medicine and although
science has been free or is now purged from errors arising from this cause yet all have been greatly indebted for their rapid advance to the successful application of these voices of knowledge. They must however be subordi-
nate means and never allowed to supplant the most minute examination investigation or be incompatible with the most inconsiderable of the data in question. To secure this, routine must be abolished. A careful and enlightened considera-
tion of each individual case with all the facts bearing on the case is demanded while the minds ought to be jealously alive to the care-
ful influence of Paprat hypothesis.

Mistakes however may arise from the manner of gleaning the facts as well as from their after arrangement. A want of fact in questioning the patient in regard both to previous complaints & present illness, neglect in ascertaining the condi-
tion of some organ not primarily implicated but the state of which might give an important hint or indication, or a superficial & cursory stethoscopic examination are causes in every-day operations counteracting the habit of accurate
From such remarks it is not our intention to infer the invariable fallacy of medical diagnosis but on the contrary to point its soundness and value when guarded from various sources of error, and also that those ascertained facts, upon which we are about to enter may, for the same reason, be the more highly appreciated.

The 'history' of a case is that which demands our attention; for every phase of a disease ought to be ascertained in forming an opinion of its nature, although a very different value will be placed on symptoms described by others from those which the physician has himself observed. Previous illnesses by their injurious effect upon the system or organ may be of importance as modifying the present disease's action. Or it may be discovered that that which is now complained of is only an exacerbation of a previous chronic disease.

Again, the sex of the patient, the age, occupations, habits, expressions, general appearance, position in or out of bed are all suggestive, perhaps characteristic and sometimes enable the physician by a few well directed questions to discover the situation.
and nature of the morbid arrangement.

The general state of the patient is next observed and the indications derived from a comparison of the symptoms exhibited by the skin, pulse, tongue, bowels, thirst, and appetite, serve to determine whether the condition be one associated with febrile disturbance or not. Having acquired such information we are enabled to institute a more intimate examination of the different regions and organs.

It is a matter of secondary importance in what order this is accomplished; if the manner be carefully attended to. Some prefer a definite order so that the mind may see at a glance the bearings of the bearings of the whole but it appears to us that there is great danger of overlooking symptoms which may have an important bearing on the case, if placed in the midst of others of less significance; the equally true.

It is not our intentions to follow any systematic arrangement of diseases in the following thesis further them the most general characteristics of distinct groups will justify us and even of these the time and space at our disposal will prevent ought but a rapid survey.
Those which first present themselves are such as affect the systems generally and in which the local symptoms are only of secondary importance. Of these fevers obtain a prominent place, not only from their distinctive characters but also as being an indication of the effect of local disease upon the system generally. To determine the latter point is always an object of the greatest importance and can only be determined by a careful examination of all the organs. Here the pulse is sometimes of great assistance—frequency and softness being more characteristic of the idiopathic, greater force and less frequency of the symptomatic pyrexia.

Idiopathic fevers may assume the most modified forms from a slight premonitory symptoms referable to the nervous system and occurring three or four days previous to the disease assuming its distinctive aspect. These consist of a loss of energy, spirits, and appetite. The tongue becomes white, the bowels irregular, wandering pains are felt in various parts of the body, and the
sleep is unrefreshing. Sometimes these are altogether wanton and the disease sets in suddenly, generally with a shivering fit. This is followed by headache or a sense of heaiveness and vertigo. The face becomes flushed, the eyes suffused, and the aspect soon assumes the complex phenomena denominated 'febrile oppression.' The pulse is generally quickened, but it is soft and in mild cases steady. The skin is hot, the thirst excessive, the tongue clammy and covered with a white or brown fur on the centre, clean at top and edges. Between the fifth and seventh day of the disease the distinctive eruption appears. It is very generally diffuse over the trunk and limbs and consists of slightly elevated spots of irregular outline and dusky purplish colour, resembling fading into the surrounding skin and disappearing completely under slight pressure. In two or three days they sink to the level of the skin, become fainter but do not altogether disappear under pressure while in the worst cases they are mingled with ecchymosed spots. As the fever advances scordes of a darker colour accumulate on the teeth slips the patient loses his headache, is very much reduced in strength as is shown by his position - lying on
his back and sunk down in the bed. The action of the fever poison on the nervous centres contemporaneous with these symptoms is peculiar. At first the patient wanders in the night only, uttering disjointed words and sentences while he lies muttering to all that passes around him. He is strange, feverish, or loud speaking, he may be temporarily aroused. This may pass into active delirium as shown by loud and incessant talking and restraint being necessary to keep him in bed. The senses are all impaired. Deafness is common but not so dangerous as an acute sense of hearing. Impariment of vision is rare and much more alarming. The involuntary passage of feces and urine is another effect of nervous debility. The complications are generally those of bronchitis. Peripneumonia.

Typhoid fever invades the system more gradually. The expression is less apathetic, the aspect not so dusty and the delirium when it occurs more active. But the more destructive characters of this fever are dependant on the abdominal symptoms and the eruption. The former are dependant upon the ulcerated conditio of patches of the 'glandulae agminatae' in the lower part of the ileum which gives rise to diarrhoea with yellow coloured fecal defecations, pain and gurglings in the caecal region when subjected to pressure, haemorrage
from the bowels and a somewhat distended state of the abdominal parietes. The eruption is popular and consists of little circular rose coloured spots which disappear entirely under pressure. They come out in successive crops of from one to twenty which fade and disappear in three days. They appear about the second week and may continue throughout the third or even longer.

Relapsing fever is distinguished from the others by the occurrence of epigastric tenderness, nausea and vomiting as early symptoms; by the yellowness of the skin, coffee ground vomitings and the eruption of minute haemorrhagic spots at a later date; and lastly its resolution by a critical sweat about the seventh day with a strong probability of its recurrence eight days afterward.

Epidemic cholera as one of the acute blood diseases is included in this group the general symptoms are of a very different character. At its commencement the skin is cold and clammy; the pulse feeble and not frequent; the tongue cold, moist, and not much coated; the stools remarkably copious, pale 'fleece from colour; the urine suppressed; there is almost always severe vomiting but no nausea; the thirst is excessive. As the disease proceeds...
To collapse the symptoms increase in intensity, the coldness of the skin and its blueness become most striking, the pulse is imperceptible and the stools and vomit assume the characters of a thin, colourless fluid resembling rice water. In reaction the skin sometimes remains cold for several days and is perhaps never hot and dry as in ordinary fever; the tongue becomes more coated; the pulse slowly returns; the diarrhoea ceases; the thirst abates; in favourable cases the urine at first scanty & albuminous is gradually restored to its normal condition. The aspect of the patient is depressed; the expression listless; the eyes sunken and surrounded with a leaden hue. The patient complains of cramps but his blunted sensations as shown by the absence of nausea and pain with the purging is much more distinctive.

Measles at its outset is characterized by the usual febrile symptoms accompanied with an inflammatory state of the mucous membranes, especially of the air passages, giving rise to the symptoms of coryza and catarh, diarrhoea and vomiting are also frequently present. The eruption appears about the fourth day. It consists of minute rose coloured papules which coalesce and form crescentic patches, leaving the skin of its normal colour in the interstices.
In Scarletina the affection of the throat is more marked, and generally presents a diffuse redness without the fissuration which accompanies quarantine. The eruption is a diffuse redness of considerable brilliancy, beginning at the neck and spreading down the chest and also appearing at the flexures of the elbow and leg. It does not generally cover the whole surface, and may be altogether absent. This fever may be of the mildest or most fatal description. Vomiting and pains in the back generally accompanying an attack of Small Pox this not destructively. The eruption shows itself on the third day, first on the face then on the neck, wrists, trunk and lastly on the lower extremities. It is papular at its commencement becomes a vesicle then ripens into a pustule.

Intermittent fevers are characterized by the protraction of the cold stage; the heat of ebullition being out of proportion to the duration of the attack; and the appearance of the tongue; and by the complete intermission of the fever on the occurrence of a profuse critical sweat. The paroxysms occur nearly at the same hour every day or on the third day or on the fourth day, when they are called quotidian tertian and quartan respectively. Occasionally an appearance of irregularity is produced.
by anticipation or postponement of the paroxysm, the for-
mer in the commencement or halt in the decline of the
disease; the rigor begins half an hour or an hour earlier
or later on each recurrence, or it may assume what is
called the double tertian i.e. the paroxysm on the first
day corresponds to that on the third and one on the
second day to another on the fourth.

In this as in all other fevers it is important to ascertain
what the circumstances were in the the patient was
placed at the time or some time previous to the attack.
We may by this means detect the specific nature of the
disease before it has developed itself so as to be prepared
to take advantage of the symptoms as they arise, and
also by timely measures ward off injurious effects from
others.

Acute Rheumatism. The general symptoms indicate
the presence of a febrile or inflammatory disorder;
the emotions of the patient refer to the existence of
pain. The pain is severe and continuous; aggravated
by motion or pressure. It flies from one limb to
another accompanied with an erythematous blush,
and swollen state of the joints affected. The
perspiration has a peculiar odor and an acid reaction.
The urine is highly acid and deposits a copious

Cataractitious deposit. There is not much difficulty of detecting this complaint but if the patient was beyond mid age we would expect the history of a previous attack. The great danger however is its metastasis to the heart, the serious consequence of which demand a daily examination. At this, the aneurism may be attached with this inflammation the delirium these occasions may be closely simulated by an altered state of the blood arising from the carbuncle affection.

Chronic Rheumatism. Pain and stiffness of the ligamentous structures often of long duration with or without thickening of the parts and increased by motion of the joints or handling of the limb, when accompanied by marked tenderness or febrile action is to be classed under the denomination of chronic rheumatism. It is more important however to distinguish it from the symptoms of other diseases and in this we will be assisted by its history, its long standing, and the changes it effects on the joints of symmetrical parts.

Gout is generally hereditary, more apt to attack those of a certain conformation, age sex who are of luxurious habits and lithic acid diathesis. A fit of gout is usually introduced with premonitory symptoms referring to gastric disturbance - pain in the epigastria
region, flatulence, febrility, and nausea. This is followed by an acute pain in the ball of the great toe of the most excruciating character on awakening from sleep, and after many hours subsides, when the foot swells and becomes exceedingly tender. A recurrence in twenty-four hours is expected but on recovery the patient enjoys much better health than formerly. Repeated attacks very frequently leave chalk deposits in the skin around the joints and as the smaller joints are alone involved these afford certain indications of its nature.

Rheumatic Gout in its early history partakes most of the character of acute rheumatism. With the absence of fever a few joints are swollen and red but free from that extreme tenderness, pain to characteristic of Rheumatic fever. As the disease proceeds the swelling in some measure subsides and the redness disappears but they remain stiff, tender, useless while others in succession become the seat of inflammatory action. The illness is protracted and the joints are permanently stiffened and distorted.

We now proceed to consider the diseases of particular organs in different regions of the body.
And first those of the nervous centres - the brain, the spinal cord and nerves. In the investigation of diseases of the brain, the number both of the objective and subjective phenomena are so limited, that a reliable history is of the greatest importance. Both in detecting the nature and the seat of the disease while a careful examination of the condition of the other organs will ascertain the presence of other disease and guard against the risk of error - especially in chronic affections.

Acute hydrocephalus occurs most frequently during infancy and is essentially connected with the strumous diathesis. The tendency of the inflammatory action is to the effusion of serum rather than lymph or pus. Its symptoms are various in different cases, but the child is usually attacked with a slight febrile disorder, with irregularity of bowels especially tending to constipation, with vomiting and occasional feebleness. As contrasted with infantile fever the heat of skin is most marked over the head but not in proportion to the quickness of the pulse; the tongue is coated but not dry; the stools constive; the thirst not urgent; while the features are anxious.
and the brow knit. In the advanced stages extreme listlessness and unwillingness to be moved, frequent sneezing, great aversion to light and noise, with marked inequality of the pulse, followed by shiver convulsions, paralysis, strabismus and total blindness make the nature of the disease only too evident.

Simple inflammation of the brain rarely occurs idiopathically. The patient's history will generally reveal some marked cause or accident to account for its presence. The symptoms are pain in the head and restlessness, followed by a quick, hard pulse, hot and dry skin, white tongue, heat of head, and flushing of face. The eyes are red and hazy, and the pupils contracted; there is intolerance of light, noises; there are rigor, nausea, vomiting and constipation followed by convulsions, delirium, coma.

Apoplexy. This may arise from a variety of causes. It may be the effusion of serum, the extravasation of blood or a fibrinious clot from the valves of the heart plugging up an artery of the brain. In a well marked case the attack is sudden—striking the patient to the ground in a state of unconsciousness. His face is purple, his breathing is labored, his pulse is small but firm.
a convulsive tremor agitates the frame. On examination one side may be found either unnaturally rigid or flaccid useless. He is in a state of coma with paralysis of one side. The condition of the pupils deserves attention: contraction indicating irritation, dilatation paralysis of the optic nerve. A want of correspondence between the two proves the existence of a more serious lesion on one side than on the other.

Epilepsy. Sudden violent convulsions not arising from any known lesion or disorder of function to which the brain is liable. It is characterized by its recurrence at regular or irregular periods. After the fit the mind of the sufferer is confused, he is inclined to sleep and may remain some time in a semi-comatose state.

Inflammation of the Spinal Cord seldom occurs except as the effect of an injury and may then be accompanied with symptoms of cerebral inflammation. In its early stage it might be mistaken for rheumatism or neuralgia; yet on closer investigation the amount of general disturbance would negative such an opinion. The pain is pretty high up and of a fixed character, increased by change of position.
Spasm of the muscles of the neck, back, and paralysis comes on early. The regularity of the spines should be observed, their freedom of movement and tenderness on compression.

Hemiplegia is the paralysis of the muscles on one side of the body. It is not usual to see a case of perfect hemiplegia as some muscles regain the power of motion much sooner than others while the affection may be so partial as to raise the suspicion that it is merely a local paralysis. When the paralysis is ushered in by a fit or state of unconsciousness there can be no doubt of its central origin. If gradual in its advent we suspect disorganization of the brain, softening or abscess; if sudden, extravasation of blood. In the former the history will probably reveal some symptoms of disease of the brain as headache, convulsion, dimness of vision, loss of memory, etc. But the latter is the more frequent cause and the diagnosis will be much assisted by the presence of carotid hypertrophy or vascular lesion. In a word the cause of hemiplegia is in operation in the production of apoplexy with or without paralysis and hemiplegia without apoplexy. It is rarely associated with disease of the spinal cord but
may be caused by the pressure of a tumour. Local paralysis arises from a variety of causes affecting the nerve or the muscle and is distinguished by observing the nervous distribution of the part bent if it involves nerves of distinct origin who do not communicate we are referred to the central organ for the seat of the disorder.

Paraplegia invades the limbs gradually and is seldom dependent upon cerebral disease. Its characteristic is that it invades both sides of the body symmetrically although not necessarily to the same degree. Its history generally shows that it has come on by slow degrees perhaps in one leg and soon after in the other, that it has gradually ascended till the entire limb from the hip downward is powerless and its sensibility very much diminished or entirely gone. This is dependent upon a condition of simple atrophy of the lower part of the cord; the symptoms during life or the appearance after death giving no evidence of inflammation. Again the history may trace it back to an injury or to disease of the spine — the immediate cause being the displacement or inflammation thus produced. The pressure of a tumour on some part of the cord, or spinal apoplexy
or general paralysis have all been found to lead to the same result. The last of these, namely general paralysis, is marked by a general loss of muscular power, a difficulty of articulation, an unsteady gait and frequently, with mental vacillation, which may advance to insanity or perfect futility.

We hasten to the considerations of the method phenomena of the organs within the chest, till lately, one of the darkest regions of the body in a diagnostic point of view, but which, by the labours of Laennec and others has become better known and understood than all others. The means we need hardly say are percussions and auscultations. The one to ascertain the relative amount and position of the solid or fluid and gaseous contents of the thorax; the other to detect the sounds produced by the movements of the air in ordinary breathing or forced inspiration, in the act of coughing, or in the resonance of the voice. The vesicular resonance is the sound characteristic of the healthy lung, but it is not always equally distinct — its loudness may vary in every case without indicating a diseased state of the organs.
When the stethoscope is placed on the right side of the upper part of the sternum the air is heard passing through the bronchi but if this is heard at any other part of the chest it is abnormal; in the smaller tubes the sound is shriller and passes with a continuous hissing noise; the former are called resonous the latter, resonant sounds or rales. Friction sound is caused by the rubbing together of two roughened surfaces of the pleura and may be of different degrees. Crepitation sound heard at the apex of a tuberculous lung resembles the crepitation together of tissue paper and is supposed to be caused by the breaking up of old bands of lymph. Crepitation sound caused by the rubbing of the surface of the pleura meshes with there is tubercular deposit. Crepitation consists of a very fine crackling sound supposed to arise from the explosion of minute vesicles in a viscid fluid. Its coarser kinds closely resemble the coarser kinds of friction sound from which it is distinguished by its apparently deeper seat and its being synchronous with the respirations only. Bubbling rales indicates a coarser kind of crepitation but sufficiently distinct from it. Shuffling sounds are an exaggeration of the former metallic twinkling conveyed to the ear the
Let it be known.
idea of drops falling with a splash in a large cavity as an
succession sound familiar to every ear, effect of the
agitation of a liquid in a main filled space.
Such are the sounds, which by their modifications and
combinations enable us to detect the rise and progress of latent diseases eminently destructive of human life.

Pneumonia. The inflammation of the substance of the lung
is an acute disease except as a complication of phthisis
pulmonalis. We generally learn that after some sort of
exposure, a severe cold has been caught; it may be accompanied with rigor and a pain in the side.
Inflammatory fever is always present; the face is dusky; breathing hurried but not laboured; the cough is hard with a tough adhesive phlegm which soon presents the characteristic rusty colour. The affected part is found dull on percussion but not so much so as in other consolidations; the breathing is suppressed in some parts and exaggerated in others; the expiration prolonged with a whistling metallic character; the voice sound is more aced, diffuse, and ringing. If along with these phenomena free
crepitation is heard, the diagnosis is certain, but
the period during which it is heard is limited.
for as the disease proceeds it is entirely suppressed, after a time however, on the subsidence of the disease the same phenomena occur in the reverse order.

In doubtful cases, as in superficial weakness and deficiency of breath sound and local exaggeration of voice sound the presence of fine crepitation is of great assistance in arriving at a conclusion and may be elicited by causing the patient to cough. It is not however pathognomonic of pneumonia. Most reliance is to be placed on the auscultatory phenomena when observed in the lower and back part of the chest since that is the most frequent seat of the inflammation.

In complications the sounds are much modified by the peculiarity of the combination.

In pleurisy the ordinary symptoms of inflammatory fever are present, with a sharp darting pain, generally referred to a spot just below the nipple. The breathing is quiet and shallow and the cough suppressed from the pain they produce by deep inspiration; the face is not flushed ordinarily and the patient avoids lying on the affected side. At this stage the physical signs are impeded movement of the ribs over the region of inflammation, suppressed and jerking breath sound with prolonged expiration; the voice sound is
incresed, accompanied with friction and there is dullness on percussion. The disease may have stopped or gone on to the exudation of serum when the friction becomes of a harsh character till the surfaces are separated by the effusion; dullness of a dead, inelastic kind is then well marked; dyspnoea is constant; pain has subsided; the erect position is preferred and the patient now lies on the affected side. Unless the lung is bound down by adhesions the breath sound is absent at the base, above it is blowing with the expiration prolonged at the level of the fluid. The voice sound has the crepitary character. When the pleura becomes quite full the intercostal spaces bulge outward; the dullness passes the median line and the heart is displaced. If the effusion is of long standing the occurrence of rigors would indicate its conversion into pus. Pleurisy may be complicated with bronchitis or pneumonia.

Pneumo-Thorax is consequent on some previous illness causing excessive dyspnoea and leads to the effusion of fluid. The febrile symptoms are necessarily of a low type from previous illness; the aspect is expressive of anxiety and depression and the posture is semi-eject. The affected side is rounder & motionless,
has a loud tympanitic resonance, with dullness at the base from the presence of fluid; vesicular murmur is entirely absent; the sounds of consolidation may be heard if that has preserved the lung from collapsing; amphoronic breathing is audible near the opening into the lung and metallic braying 9 succession may by proper management be produced.

Bronchitis may be acute or chronic. The former has a history of cold followed by catarrh, attended by a good deal of heat + chilliness, by pain diffused over the front of the chest, and a heavy or painful sense of fullness after coughing; the expectoration is inconsiderable at first, but soon becomes glairy and afterwards yellowish. The auscultatory signs are the same in both kinds. The chest is resonant; sonorous resiliant notes are first heard, which are soon superseded by moist sounds; these again on the declension of the disease give place to the former; the voice sound remains the same as in health. The breathing first becomes natural at the apices, the moist sounds lingering longer at the base. Phthisis and emphysema may modify the chronic complaint or simulate it.

Emphysema is characterized by laborious breathing and a feeling of dyspnoea. The chest is full, high, resonant; the cough voice weak & powerless; the aspect muddy.
the ribs deficient in movement and the vesicular murmur given place to a distant, prolonged expiratory sighing. It is only however on the supervision of bronchitis that this affection attracts the attention of the patient on which till the symptoms are present in an aggravated degree along with those peculiar to bronchitis.

Pthisis Pulmonalis. The history of a patient suspected of labouring under this complaint is of the greatest value in diagnosis and ought to include the loss of relatives from diseases of the chest under whatever name, especially those occurring about the period of adolescence; account of previous illness and ailments (the mode in which the present attack commenced), it must be regarded as unfavourable when cough has begun previous to catarrh and of a dry hacking character when there has been haemoptosis along with it and it has changed to one with a thin mucilaginous, viscid water-sputa and subsequently thick yellow phlegm. The general symptoms very often indicate the presence of hectic, the skin, especially on the palms of the hands, being at times dry and hot while at others it is liceened with excess of moisture; there are night sweats; the pulse is quick and weak, the tongue frequently patchy. The skin of such patients is remarkably thin and may be readily
pinched up; the nails are clubbed; diarrhoea is present; the aspect is languid; the eye brilliant. The chest pale with a hectic flush; cough is most complained of. The enquiry is made; wandering pains in the chest with a feeling of tightness and the voice is very often characterised by a slight degree of hoarseness which may terminate in aphonia. The auscultatory phenomena may be divided into three stages. In the first the inspiration is shorter and more harsh than natural or it may be weaker than the opposite side; the expiration is prolonged and both have a wavy or jerky character; the percussion sound is slightly duller and the voice sound evidently increased. In drawing conclusions from these facts we should keep in mind the greater distinctness of the vesicular murmur on the right side and the more audible pulsation of the subclavian artery in the left. The second stage has more marked consolidation with retention of the bronchial tubes. These give rise to increased dullness on percussion and vocal resonance; to sonorous and bubbling rales; to friction breathing sounds; to crepitation, and to the clicking and crumpling which are almost characteristic of tubercular deposit. In the third stage, the larynx is being broken down and the tubercle expectorated. The dullness on percussion is unmistakable, and when a
a large cavity exists is converted into something approaching to sympathetic hollowness; the breath sounds is still more blowing; the voice sounds so distinct as to appear to be spoken into the tube of the stethoscope and is even more distinct when the patient whispers. When these cavities are partly filled with fluid the sounds called bubbling, gurgling and metallic are produced.

The pathology of phthisis is often of great importance in interpreting the auscultatory phenomena. In this way it, deposition in the spaces previous to other localities, its advanced stage there, and the unequal amount of deposit on the two sides may determine a doubtful diagnosis.

We had anticipated to overtake the consideration of the diseases of the heart and concluded with an analysis of the auscultatory phenomena and the comparative value of the most usual combinations in which they are met but as this is not in our power at present and as the treatment of so extensive a subject in a proper place the present must necessarily be imperfect, it is to be hoped that the foregoing pages have been sufficiently full to convey an impression of the value and importance of medical diagnosis as a branch of the science of medicine and the art of healing.