Medical Thesis
Cutaneous
(or)
Exanthematic Syphus
Fever
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Consulted no leader on the subject —
Cutaneous or Exanthematic Syphilis

As a typical continued fever, it is so named because one of its principal symptoms is a mulberry papular eruption or rash which shows itself over the whole cutaneous system. It often prevails as an epidemic, is infectious and contagious and usually terminates in convalescence about the fourteenth day from the onset of its symptoms.

We shall describe shortly its origin and manner of spread. This fever is due to the reception into the reproduction in the system of a specific fever poison, which acts injuriously upon the tissues at large, and sometimes in such a severe degree as to endanger and destroy life. The poison, though no doubt often communicated by things external to the organism, yet has its primary origin in the living organism from overcrowding, bad ventilation, etc., and exists in the cutaneous, pulmonary and other exhalations which are being constantly given off, where men and animals congregate.

Some in opposition to this view, say, that the fever poison is always in existence, that it adheres
to certain localities, houses and articles of furniture, that it is only waiting for a favourable opportunity to develop itself and will spring into an epidemic. Few at the present day deny that the poison of malarious fevers has its origin in decaying vegetable matter, or that the poison of the miasmatic fevers, diarrhoea, dysentery, etc., does originate in the decay of animal matters and excreta, yet many will deny that the poison of cutaneous typhus originates at all. But that the poison has its origin de novo in the living organism we see very good reasons for believing.

Most people have experienced the effects of an overcrowded and badly ventilated house, the headache and other febrile symptoms which are the invariable results of such, sometimes even amount to smart febrile lasting for a few days. Now the difference between these and continued exanthematis merely in degree, we were we exposed to the action of these emanations for days instead of hours. There is no doubt but this fever would soon make its appearance. The records of history too, point to some strong examples of this disease originating de novo, as the case of the Black Hole at Calcutta and the Assizes at Oxford, then which
No stronger evidences are needed to prove that
it originates in the organism.
We have lately heard of patients dying of
this fever, where there had been no known
exposure to the poison, & where there was no
thing to account for the origin of the fever
of the death of the patients, but the fact that
they slept in closed bedrooms.
There is an intimate relation too between
the two forms of typhus: viz. that while the
entire fever poison is generated in the process
of decay of fecal matter, it attacks that part
of the organism from which those matters
were expelled. The poison of the cutaneous form
generated in the exhalations from the body, cut-
aneous & pulmonary, attacks chiefly the cut-
aneous system. With regard to the propagation
of the fever, we have just seen that it can be
generated among the healthy, next we see that
is communicated from the sick to the healthy,
directly through the atmosphere into their
bodies, & if such a state of health be present, it
will favour its reproduction & growth in their
system — or provided the dose has been large
enough, the symptoms of the fever will soon
Manifest themselves. Lastly, it may find its way from the sick to people at a distance indirectly by clothes, articles of furniture &c. acting as fomites. In this way too we account for it breaking out in houses again & again, after a number of years from the first attack, provided cleanliness & proper disinfecting agents have been neglected.

After the reception of the poison into the system, a period more or less in duration elapses before any well-marked symptoms of the fever manifest themselves. This is known as the period of incubation. During this period though the patient may feel nothing the matter with him, yet he is capable of infecting others of the disease. For if the poison is being reproduced in his body, it must to a certain extent be given off from it, & it is only when the poison becomes so strong, that his strength is unable to counteract its influence any longer, that the disease fully sets in.

But a person may carry the disease about with him, without it ever manifesting itself the dose at first may not have been strong enough, or from being inoculated to it, he has obtain
ed immunity from it, just as an opium or arsenic eater experiences no injurious effect from doses which would most certainly cause speedy death to those not accustomed to it. The latent period or period of incubation (which last is in our opinion the preferable term as it conveys the idea of the poison being active increasing in strength and not at a standstill as the term latent would make us believe) varies greatly. It may be as short as three days or as long as a fortnight.

Usually, however, the symptoms begin to manifest themselves in about a week from the reception of the poison. This period is not always marked by the same symptoms, sometimes it is so short that it seems to be at once under its influence, after exposure. This indicates that the dose communicated has been very large, or that the patient has been very highly susceptible of its action. Throughout its whole course too, Cutaneous typhus takes a great many other fevers affects different individuals in a different way, according to the laws of polymorphisms.
During the period of Incubation, however, the patient generally feels a little out of sorts. He complains of occasional headache, slight chilliness, he has languor & it may be disturbance of the digestive system. Sometimes he never knows that anything is wrong, till he is seized with the more advanced symptoms of the disease. These symptoms which we have been describing, may be called premonitory, but they can't be at all depended on, as they are scarcely ever the same in two different persons. We shall now proceed to describe the more advanced & more constant symptoms of this fever.

Symptoms

In a general way the first well marked symptom is a rigor of a very severe character, a sensation of coldness creeping down the back, as if cold water were being poured over it, accompanied with the Culis bunsorina.

The patient generally experiences intense frontal headache, which he describes as being like to split, & he spends a wake-
ripe and restless night. If the rigor be not present, he is generally able to tell us very definitely about the time the fever began, he remembers having been faint and feeble, having great disinclination for exertion and the headache is most commonly present.

During this shivering stage of the fever, the patient is said to be in the stage of Horribilation; he feels very cold, his teeth chatter, yet in this cold state, the evolution of heat from his body is found to be greater than when in perfect health.

When a thermometer is placed in his axilla, or mouth, we see that it indicates a temperature considerably above the normal healthy standard. Instead of a temperature of 98° we will find it rising to 101° or 102°.

What then is the cause of this feeling of coldness? It is evidently a nervous depression—a parasthesia or perversion of sensation, due to a morbid condition of the nerve centres, from which the skin
is supplied with sensitive nerves.

The shivering stage does not last long
and is succeeded by a dry & hot skin, ris-
ing perhaps to 103°, a quick pulse & white
dry tongue. The frontal continues very
severe, the patient has a dull expression
of Countenance. The eyes are dull & heavy
& generally great mental depression, indic-
at ing a severe shock upon his nervous
system. This condition of things contin-
ues till about the third day, it is some-
times especially in severe cases aggravated
by slight delirium, at the hour of falling as-
leep. Now the tongue Changes from a white
to a more characteristic brown Colour, with
a slight degree of redness at the edges.

In the meantime the bowels are gener-
ally Constipated, & the urine is scanty,
and high coloured.

There is often nausea & vomiting, general
irritability, restlessness especially toward
evening, he complains of great muscular
weakness & he cant sleep or if he does, he
is troubled with Confused dreams.

Usually about the fourth day of the fever
The characteristic eruption makes its appearance before this takes place it is generally certain that it is cutaneous typhus with which we have to deal with.

It is known as a papular mulberry eruption & diffuses itself over the whole of the body, sometimes accompanied with a morbiliform or mottled aspect of the skin. The papulae feel as if raised above the surrounding skin, they have no distinct margin, disappear under the pressure of the finger, but reappear immediately when the pressure is withdrawn.

These papulae remain constant until the termination of the fever, but become somewhat altered in colour, so that towards the end they are a good darker, they do not then entirely disappear but are said to "fade under pressure" if they sometime accompanied with petechiae.

It is usually about the fourth day too that the patient has an exacerbation of symptoms. He lies on his back, has an anxious look and pinched features, he feels very weak almost unable to sit up in bed except
With assistance when told to show his tongue, he puts it out in a tremulous hesitating manner. The tongue is now covered with a very characteristic dark brown fur in its centre, dry & often cracked, with redness at the margin. The headache is still intense & the eyes are bloodshot. These phenomena are all very constant, always occurring about the same time, i.e. from the fourth to the seventh day of the fever. Their occurrence from the first day of the fever up till now, mark out certain days, as those on which we always expect to see certain symptoms, & we call these "critical days".

On these critical or judicatory days we are able to a certain extent to judge as to the probable termination of the fever.

These days are generally well marked: they are the first, fourth, seventh, ninth, eleventh & fourteenth. Thus on the first day we have the rigors & accession, the symptoms on the fourth we have the exacerbation, the appearance of the eruption, on the seventh as we will soon see, we have delirium showing itself generally in any marked degree, on the eleventh we have symptoms of coma, if the fever be of
a grave character. On the fourteenth day, we have symptoms of returning convalescence or the death of our patient.

During the first seven days, the patient has been troubled at times by noises in his ears, from the stupid manner in which he answers questions, we can see that his nervous system is severely taxed, yet there is generally no very decided delirium before the end of this period.

Towards evening on the seventh day, however, delirium generally sets in, continuing more or less severe during the night, but consciousness returns on the following morning, it is repeated again on the following evening but perhaps in a milder degree.

On the ninth night he has an aggravation of the same symptoms, he may now be violent and aggressive in his manner, which is not a favourable symptom at this period of the fever. More often, however, the delirium is of a milder nature, he falls into a sort of half comatose state and seems unwilling to be roused. He does not complain of headache now or any pain whatever, but if it continues it must regarded unfavourably, as indicating
that there is some encephalic lesion.

At this period the corporeal and mental powers have become equally weakened and depressed, he lies on his back unable to move, his powers of attention and comparison are gone, there is usually a confused sensation about the head. About the eleventh day more or less coma generally supervenes, at least somnolence nearly amounting to coma.

The tongue is now covered with black fur, the teeth are covered with sordes, the conjunctiva are injected, the pupils are contracted. He can be made to answer questions put to him in a loud and distinct voice, but he seems unable to fix his attention for any time on any one subject, he looks stupid and mutters words and short sentences incoherently.

He continues thus for the next two days, if he dont become so deeply comatose that he cannot be awakened, no great danger need be anticipated. On the fourteenth day the symptoms of a return to convalescence pretty generally set in, the pulse has fallen considerably in frequency, the heat of the skin has been diminished, he looks lighter.
and more intelligent, he expresses himself as a great deal better, becomes very sensible of his extreme weakness and inability to move. His appetite has returned a little; the tongue becomes moist at the edges, the papillae are now much paler and soon disappear.

In a few days more the tongue cleans beautifully, the appetite now becomes insatiable; the patient rapidly regains strength.

Such is a brief account of the principal symptoms of Cutaneous typhus in the order in which they generally show themselves. We shall now describe the chief points in the Diagnosis.

This in a general way is not very difficult. If a case presented itself before any well-marked phenomena had begun to show themselves, & no epidemic present at the time, we might easily enough be puzzled with it, but in the cases which we have seen during the present session, a second look was not generally required to convince us that we had to deal with one of two diseases: viz. either the Cutaneous or enteric form of typhus fever. It is the distinction of these two
forms of fever that constitutes the principal part of our diagnosis.

First of all, the accession of the symptoms in the cutaneous form is far more sudden than in the enteric form of fever, and in the latter there are generally some marked abdominal symptoms sufficient to put us on our guard, as diarrhoea, gastric derangement, pain in the right iliac region, sometimes gurgling gut.

The cutaneous fever will attack people of all ages, while the enteric form is chiefly limited to young or under forty years of age.

The delirium is more marked and appears earlier in the cutaneous than in the enteric form, but the great distinguishing feature in the two diseases is the appearance of an eruption or rash characteristic of each.

In cutaneous typhus we have seen that the eruption appears about the fourth day, in the form of a mulberry papular eruption, diffusing itself over the whole of the body, the spots exhibit an irregular outline, not all of the same size, the larger ones perhaps being formed by the coalescence of two or three of the others. The rash appears over the whole
Surface of the body, and remains permanent throughout the whole course of the fever, only disappearing at the decline of all the other febrile symptoms. In the enteric typhus fever, the eruption appears in the form of distinct spots of a rounded form very like flea bires, chiefly on the region of the abdomen, not generally before the seventh day of the fever.

They are of a rose red colour, and are not permanent throughout the entire course of the fever, but appear in the form of successive crops, each crop fading in two or three days, to be succeeded by another fresh one in all respect similar to the first. This goes on during the course of the fever, so that it should be specially looked for, as it will form a most important part of our diagnosis. Then we have in the form of fever, more or less abdominal tenderness, diarrhoea, haemorrhage with the stools and metritis, symptoms which are seldom if ever present in the cutaneous form of fever.

In cutaneous typhus too, the nervous system seems to be more severely taxed, the delirium is earlier in making its appearance and more severe than in the enteric fever.
We have already seen that the cutaneous fever generally terminates in convalescence about the fourteenth day while enteric typhus does not usually terminate before the twenty-eighth day. The post-mortem appearances are very different in the two forms of fever.

The cutaneous fever may not be marked by any special lesion at all, there may be slight congestion within the cranium, perhaps engorgement of the sinuses, congestion of the mucous membranes of the organs of respiration, but this last may be due to inflammation, which is often present as a complication, and not a result of the fever at all.

In enteric typhus, the post-mortem signs are generally constant, the agminated glands of Peyer, situated in the ileum are ulcerated in the majority of those who die of the fever, to such an extent, that perforation of the bowel has taken place, death occurring from peritonitis. These last points in the diagnosis have not fallen under our observation with regard to Cutaneous typhus. But we have seen them in the enteric fever, for though we have had no small supply of Cutaneous typhus in the war...
During the present we have not seen what might be called a case of pure typhus terminate fatally.

Such may be taken as the chief diagnostic difference in these two forms of fever. There are other states also from which we require to distinguish Cutaneous Typhus, such as pneumonia, where we must be guided by the points in each individual case, if there be no epidemic of Typhus & we have the physical signs & other symptoms of pneumonia present, we may be content with treating it as an ordinary case of pneumonia until we see if symptoms of fever manifest themselves. But we need not be surprised to find pneumonia & Cutaneous Typhus often co-existing. Certain morbid nervous conditions too require to be distinguished, but the history of the cases & is usually sufficient to enable us to establish a correct diagnosis. Let us next proceed to the Prognosis.

In simple uncomplicated cases of Cutaneous Typhus our prognosis may be always favourable, for there is more danger
in the complications than in the fever itself. Dr. Laycock in his admirable lectures both in his Clinical & systematic Courses, has impressed us firmly with the belief that there is no more danger of a case of Cutaneous Typhus terminating fatally than an ordinary case of scarlatina.

We have seen, during the last few months, how well this view has been exemplified: for, though a great many of our cases were very bad ones indeed, whose lives, to inexperienced eyes, seemed to be hanging in the balance; yet in almost none did a fatal issue occur.

The same authority has pointed out to us also, that in proportion as the previous tendency to death is greater, in the same proportion will our patient more readily succumb to the fever.

There are however certain phenomena sometimes occurring, which warn us from experience to give a guarded prognosis. The following may be said to be a class of these phenomena which may be regarded as of unfavourable import.

A very small weak & quick pulse; about one hundred & thirty beats in the minute, a temperature of 103° as ascertained by the ther-
Monteré, which does not decline towards the middle of the second week of the fever, along with these extreme wakefulness may be regarded as three of the worst symptoms. If along with these we have high delirium, muscular twitching or subsultustendinum, great general nervous depression in the intervals of repose & a preseniment of death, we may regard the case as a very unfavourable one indeed.

But we are not to be at all alarmed with a moderate delirium occurring at night, for we have already seen that the patient will tell us in the morning, that he has slept well, whereas the attendants will tell us that he has been tossing on the whole night.

Amongst the symptoms from which we may draw a favourable prognosis are the following: A sudden decrease in frequency of the pulse, a tendency to sleep, decrease in the temperature of the body & a desire for food during the second week. In such a case we need not hesitate to give a very favourable prognosis. Cases complicated with pneumonia are not so favourable. We must not promise
too much for the ultimate result.

Pneumonia in itself is a dangerous disorder occurring at a time when the blood system generally is so highly charged with a poison like that of Syphilis, if the vital powers reduced to that extreme degree which we usually witness at its cessation, we need not wonder that the sequelae are often more fatal than the disease itself. The age of the patient too, may be of some importance in making a prognosis. It may be said generally to be more fatal in very young children, because in them the vital powers are weak, in old people, because there the tendency to death is greater than in young adolescence or middle age. Puerperal and parturient women here as in most other fevers, are extremely unfavourable cases, very oftener falling victims to the disease. Again as the poison seems to expend its force in a great degree upon the nervous system, people who work their brains much have not as good a chance of a safe recovery as those who are otherwise employed.

And lastly, persons who are naturally weak, whose vital powers are low, or who are labour
ing under any cachectic disease or strong dia-
letic tendency are much more unfavourable.
Cases those who are in perfect health.

Treatment—First we shall describe shortly
the best method of Prophylaxis when the disease
has already broken out, and then we shall give
the treatment of a typical case of Cutaneous-
phlegm. We have seen how liable this disease
is to spring up again and again in the same
house or locality; we must try to prevent
this by attention to cleanliness, washing the
walls of houses frequently with hot lime, or
other disinfecting agents, allowing plenty
of fresh air to mix with it, thus diluting the
poison, which is perhaps the best method of dis-
infection; at the same time we see the neces-
sity of large well ventilated rooms for our
fever patients; the prevention, as far as may
be convenient, of all communication between
the sick and the healthy. When the fever is just
beginning to manifest itself, certain plans
of treatment have been practiced with a view
to cutting it short. First, bloodletting used
to be resorted to in later times, but we hardly
Think that anyone nowadays—except under very special conditions—would resort to it. When we think of the uncertainty of such a method attaining the object at which we are aiming, I compare it with the result if we do not succeed: we think the safer course would be not to interfere with Nature in the performance of her work, but rather to trust to and assist her if possible in its completion.

The second method of giving emetics in the early stages seems a more reasonable one. If there is much nausea at the commencement of the fever, there is every reason to believe that we are aiding Nature to expel something which she does not require.

The best emetic we can employ in such a case is a mixture of powdered Speciecanha Tartarized Antimony, 20 grains of the former and one grain of the latter.

The cold affusion has been tried too, with a view to prevention, and according to some with a great degree of success, while with others again it has utterly failed. We would be afraid to make too much of this preventive remedy as it is very apt to cause too much depression.
We have seen cases of scarletina, if not cut short, at any rate very materially alleviated by means of the wet sheet; would this not be a safer and equally successful method inti.

plus, yet not so apt to cause great nervous depression? Then again quinine has been given in large doses, so as to produce its physiological action on the tissues; if the fever be in any way connected with malaria, no doubt, it may exercise a beneficial effect, but except under such circumstances we could not have much faith in it.

When we take a survey of the methods of treatment of fever fifty years ago and compare them with the methods adopted at the present day, we cannot fail to be struck with the change that has taken place.

In those days, it was the common almost invariable plan to commence the treatment of fevers and all other acute diseases with a full bloodletting, while at the present day it is the rarest thing in the world to bleed for anything.

Great discussions have arisen as to the cause of this change, some saying that
type of the disease is changed, while another
party avers, that more enlarged views of path-
ology & the application of therapeutics tended
to these innovations in practice.

We see good reason for believing that both are
right. There is no doubt but epidemics of all
kinds become gradually weaker, though the
practice of vaccination were stopped, we would
not expect to see the next epidemic of small-
pox, half so virulent & fatal as it was a
hundred years ago. What has led to this-
Change? Simply, that generation after gener-
ation has had smallpox, that each one has to a cer-
tain extent obtained immunity from it as a deadly
& virulent disease, that this immunity has descend-
ed from parent to child according to the laws
of heredity & that thus a gradual change has
taken place in the type of the disease.

Now we doubt not, but this may
hold good in like manner with other dis-
seases as fevers of various kinds, where
it is known that one attack gives immuni-
ity from a second. But at the same time
we see good reason for believing that our
increased pathological & therapeutical know
Ledge has had the effect of altering in a considerable degree our method of treatment.

At the present day though fevers & other diseases were as fatal as formerly we would never think of carrying bleeding & other heroic methods to such an extreme degree, for we know better our inability to cure the mildest of them, but rather trust to the plan of putting our patient in the most favourable condition for allowing the disease to run its course, with the smallest amount of risk of letting Nature do the rest. The following is a short description of Sappey's Exanthematicum, as we see it carried out daily in the Ward of the Royal Infirmary. It is simple & effective.

Our fever patient should be kept in bed in a well ventilated apartment, kept at an equable temperature of about 60°, not covered with too many bed clothes, just enough to keep him comfortable & no more.

An emetic may be given early if nausea be present, after which the bowels may be acted on by a mild laxative, such as castor oil.

The cold stage will perhaps be best treated by giving a warm drink, as tea, beef tea etc.
but when the hot stage sets in, we see the propriety of cold or tepid sponging of the body with vinegar and water. The thirst, which now is often distressing, must be allayed by plain water or with a few drops of acetic or dilute phosphoric acid in it, perhaps the last is best, it is the one we have been in the habit of seeing administered. But good strong tea may also be given, as it is an excellent febrifuge tis said to diminish the amount of loss of tissue.

Appropriate diet must be administered to sustain the patient as well as possible, good beef tea, rice and milk, chicken broth is rich like maple assiduously administered. Great care should be taken that he gets his food and drinks regularly especially during the second week of the fever, if asleep the shoulder should be regularly raised for this purpose, every three hours after the fourth day of the fever.

If delirium threatens to be violent, we must shave the head, have ice bags applied to it, or the cold douche frequently had recourse to. The administration of stimulants must be regulated by the circumstances of the case, but do not generally require to be
resorted to before the second week of the fever after this time, nearly every case requires them.

The following circumstances may in some degree guide us as to their administration.

When the cardiac impulse is very weak, the first sound almost inaudible, if there be a tendency to syncope when the patient is lifted up or attempts to sit up, an irregularly intermittent weak pulse, or there be coldness of the extremities or profuse cold perspiration, then a liberal supply of stimulants will be indicated. But it is often necessary to give them long before these symptoms are manifested, as where great muscular weakness is complained of early in the fever, yet it is well to remember that the nightly delirium does not in the least degree contraindicate their administration.

A good glass of brandy toddy in the evening will often have the effect of allaying the delirium instead of aggravating it. For greater danger may be anticipated from giving opium in these cases to produce sleep, for if you succeed in doing so, the chances are ten to one that he will never awake.
Ammonia may be given as a stimulant, but wine & brandy are much better, the latter may
be given in quantities varying from eight to
twelve or sixteen ounces in the twenty four-
hours according to the urgency of the case.

It must be remembered that in aged
persons & those who have led intemperate
lives, stimulants will have to be begun earlier
given in greater quantity to produce the desired
effect. In very urgent cases we must give
stimulants almost hourly, though our pati
ent become unable to swallow food & stim
ulants, we must not give up the case as
hopeless but resist the tendency to death as
long as possible, by means of enemata.

The complications must be treated accord
ing to circumstances & as a general rule it
is well to avoid all drastic purgatives.

By such a method of treatment, our
patient usually recovers about the fourteenth
day from the commencement of the symp
toms & we have him now in the period of
convalescence. During this period he must still
be kept within doors, suitable nourishing
food must be administered, he should get
it frequently & not in too large quantities at a time, which is very apt to happen if care be not taken, as his appetite is usually insatiable. At the same we may administer Codliver oil & tonics to strengthen the Constitution & he usually soon recovers his wonted health.

I have given a brief description of cutaneous typhus fever, as regards its mode of origin, its symptoms, Diagnosis from other disease, Prognosis & Treatment, & my description consists merely of a summary of my notes, taken during the present session in the Practice of Physic's course & at the bedside of the patient in the Wards of the Royal Infirmary. I have consulted no books on the subject.

Robert Shaw

To

Professor Laycock.

Edinburgh
31st March 1866