PSEUDO-MENINGITIS
WITH SPECIAL REFERENCE TO
MENINGISM.

The term "Pseudo - Meningitis" has been used somewhat loosely in English Medical literature to indicate at least two conditions which have very little relation, the one to the other.

It has been applied in the first place to hysteria with meningeal manifestations.

My experience of that conditionmis small, but taken in conjunction with what I have seen of other forms of the disease, it has been sufficient to convince me that one can scarcely generalise about hysteria, and that for assured diagnosis and successful treatment there is necessary, not only a full knowledge of the patients physical condition, but also a knowledge of his mental and moral attributes.

I can recall only three cases of hysteria with definite meningeal symptoms. The first was a young man who had well marked twitching of one side of the face, convergent squint and eventually blindness. In this case the diagnosis was easy because he had already

had very marked hysterical phenomena including almost complete absence of urine from the natural passages for weeks at a time, the urine passing very freely in the form of sweat from the front of the thoracic and abdominal walls. He eventually made a complete recovery. The other two were young women. One lay for some weeks in a lethargic condition from which she was only roused with difficulty to take small quantities of nourishment, and at once relapsed. I cannot remember how the diagnosis was made at first but it was confirmed by the maintenance of weight and plumpness, in spite of her lack of food and by her complete recovery.

The other exhibited a very typical hysterical condition which we might term symptomatic anachronism. She had very markedly the signs of the earlier and irritable condition of meningitis running concurrently with the later and paralytic signs.

There was twitching of one side of the face, well marked convergent squint and occasional attacks of delirium along with complete

hemiplegia.

The squint also was typical in that both eyes were inturned.

Occasionally one detected her looking straight ahead but immediately she noticed the observer her squint became most marked. She also recovered from her hysteria but has been anaemic and very weakly ever since.

The other condition to which the term has been applied is that to which I wish to direct attention. In English literature it has been little discussed but in France more attention has been paid to it, especially by Dupré who ~~made~~ under the name of "Meningism" describes it as a symptom - complex more or less closely simulating the picture of meningitis but without perceptible anatomical change either in the meninges or the centres of the brain.

To demonstrate the existence of a condition of which one of the essential features is a total absence of perceptible lesion is difficult, and Dupré recognises the difficulty.

He believes that there are lesions but so minute or otherwise so difficult of detection that they are beyond our present methods of examination.

To use his phraseology,

"The solution of the pathogenic problem is reserved to the technique of the future". Indeed that future is already foreshadowed. Some cases which he or those who believe with him in this matter had diagnosed as meningism and which died from other deseases have been shown to have had very slight inflammatory changes sufficient to put them in the class of simple or serous meningitis. There still remain cases where no such pathological condition can be demonstrated.

But for the general practitioner while the pathlogical problem is certainly interesting the chief importance must be clinical especially in a disease which is only rarely fatal.

Perhaps I can best introduce the clinical description by reciting a typical case.

Called out at midnight to a child in

convulsions I found a fairly well-nourished child of two years completely unconscious, with rigid, back-drawn neck, well-marked convergent squint and total absence of reflexes.

T 102° P.120 R 18.

There was no marked indrawing of the abdomen nor bulging af the fontanelle, which was not very open, Tache cerebrale was not distinct and Kernigs sign doubtful.

There was discharge from the right middle ear which I was told was of several months duration and had not varied within the last month in character or amount.

The history of onset was that at four p.m. the child had fallen backwards and hit hish head. He cried for a little and then went on with his play.

About six he became very sick and vomitted but shortly afterwards seemed quite well and replenished. Soon after ten he got very cross and restless and about ten thirty

was seized with a violent convulsion which lasted about 20 minutes. After a short interval another convulsion came on and he had not recovered consciousness.

There was a story of a previous convulsion which was ascribed to teething. The parents, while in average health are both neurotic, the father's mental equilibrium being particularly unstable.

Seen next day there was little change. T. slightly lower (101°) P. & R. as before. Third day. There was some return of intelligence, squint less marked, and while the neck was still stiff the head was not drawn back. Plantar, Patellar and Corneal Reflexes were elicited with difficulty. T.100 P.100 R. 24½

Fourth day. Child apparently quite well, eyes quite parallel, neck quite easily moveable. Reflexes normal T.P.R. also normal. At no time was Kernigs sign well-marked. The ear condition did not vary throughout the illness.

See a fortnight after, the child had kept quite well and the ear was being neglected as before in spite of warnings.

The history of a fall in an old standing middle ear case followed by the picture which presented itself when the child was first seen painted in my mind to an acute septic meningitis and for the first two days my prognosis was absolute bad. The rapid and complete recovery is a proof that my diagnosis was quite wrong and that there cannot have been any gross or serious cerebral lesion.

While this is perhaps the most typical case in my expenience it is by no means isolated but was difficult both in respect to early disgnosis and to causation.

In many cases which simulate meningitis the symptoms are probably due simply to rise of temperature the result of some imflammatory or septic condition in other organs of the body, and are comparable to the rigors in Adults and the convulsions in children which usher in

most febrile disorders. Stokes long ago said that in high temperature in children there may be every symptom of menigitis without physical lesion. This is only a short step beyond those convulsions with which some children are seized on the slightest provocation and sometimes without any apparent provocation at all. It is stretching Dupré's definition unduly to include such cases as these in as much as the meningeal symptoms pass so rapidly and give place to those distinctive of the primary lesion.

I mention this class of case only as it may illustrate the causation of meningism.

Another condition to which I would like to refer for the same reason is Acetonaemia which is said to be due to an improper digestion or metabolism of fats, and frequently displays symptoms closely resembling those whichusher in meningitis. I have had one fairly typical case. My patient was a little chaprising three of distinctly tubercular parentage. Three months before this illness

he had suffered from a bad broncho-pneumonia from which he barely escaped. His recovery had been good but interrupted twice by attacks of sickness and malaise of two or three days duration.

When apparently doing very well he was suddenly stricken by a very sharp febrile attack at the very beginning of which he had very slight crepitus at one base lasting less than one day. Thereafter no pulmonary signs were made out. For four days he lay with Temp. fluctuating between 100° and 103°, with rapid pulse and breathing, but pulse respiration ratio normal (160 to 40), absolute refusal of food and vomitting when forced to swallow it and with a continual muttering delirium punctuated by sharp cries.

Within a few hours of the rise of Temperature the odour of acetone was most marked in his breath. I regret that his urine was not examined for acetone. It contained no albumen. At the end of the four days he was very feeble and had lost weight very greatly, but gradually began to take liquid

food and recovered very rapidly. His reflexes were normal although at the end his muscles had lost tone and the patellar reflex was very feeble and was elicited with difficulty. He never simulated the picture of meningitis but throughout kept us on the outlook for its onset. In my opinion the case was one of general sepsis due either to over ripe fruit or to fault of drainage which were subsequently discovered. Acetonaemia could readily be set up in that way and I have emphasised the acetone aspect because Thiemich of Breslau describes similar symptoms associated with its presence.

Both in high temperature and in such a case as I have just described you have chemical abnormalities in the blood and very possibly the causation of meningism may be found along that line.

In the absence of more definite knowledge it is said that the causes of meningism are of three types, Toxic, Reflex, and Irritative.

I do not know that it is possible to distinguish exactly between those types. The

most common reflex cause for example is some intestinal parasite. But the bowel which lodges parasites is unhealthy either as cause or effect of the parasite and there must be undue absorption, probably toxic.

The irritative type is described by Jackson, Radical Mastoid and similar operations, where the dura mater is exposed, are according to him quite often followed by Meningeal symptoms, although there is no sepsis and indeed no evidence of meningitis. Those symptoms last but a few days and then disappear leaving the patient to make an uninterrupted recovery. Meningism often occurs also in cases of middle ear disease either early, before rupture of the drum and releived by puncture, or later, when pus has found its way into the mastoid but has not infected the meninges. Those cases are by Jackson classed as irritative in the belief that the pressure set up by the pus is sufficient to cause the symptoms. It would be very difficult indeed in these cases to prove

that there were no toxins. chemical or bacterial, attacking the membranes. My experience of cases of the irritative type is not large. Two cases diagnosed with assurance as meningitis recovered rapidly after rupture of the tympanic menbrane and the evacuation of pus.

Another case may have been of the same class and is certainly interesting. A girl of eleven had a furuncule in the right ear with acute pain. When this ruptured, pain persisted and as soon as examination of the drum was possible it was found congested and distended. Next day it ruptured and discharged with some freedom. On the fifth day after discharge commenced she complained of acute pain in the muscles at back of neck on right side, which persisted with intermissions. On 6th day a consultant saw her and suggested that the pain was due partly to the arritation of the auditory meatus, tender from the furuncule, and partly to an insufficient opening in the drum. He accordingly incised it freely. On 7th day she was much better. On 8th pain again began in the neck alternating

with acute pain in the temple. Her temperature which had not hitherto gone much above 99° now passed 100. P. 108. P.R. ratio normal. On 9th day always counting from beginning of discharge the pain was still very severe both in neck and temple, and there was slight convergent squint and slight stiffness of the neck. Temperature over 100½ Pulse 90, Respiration 28. There was no tenderness over the mastoid nor along the jugular. The reflexes were normal. She was again seen by the consultant and on the 10th day the mastoid was opened and pus found in the cells. The antrum was clean and there was no evidence of meningitis either on the dura or in the sinus, which was quite free. The pain and squint were gone after the operation and recovery was smooth. There were centainly symptoms pointing to meningitis but their immediate disappearance seems to show that the membranes were not affected.

The case is also of interest from the appearance of pus in the mastoid within a fortnight of the first symptoms of middle

ear mischief.

The great majority of cases of meningism are undoubtedly of toxic origin. I have already suggested that all cases may be due to a chemical as opposed to a bacterial poison. The class of cases specially labelled Toxic contains those which are associated with diseases caused by specific poisons. While any one of the infections fevers may stand in a causal relation to meningism, measles is certainly most frequently found in this connection. I have seen three cases where a diagnosis of meningitis was declared or about to be declared which cleared up almost at once on the appearance of a well marked measles rash. None of the other exanthemata have been associated with it in my experience, but pneumonia and gastro-enteritis have been ushered in or accompanied by well marked meningism.

I will record one illustrative case. The patient was a girl of 5½ , not very robust and of very neurotic parents. She

had had several illnesses and especially had suffered from fits during her primary dentition. On this occasion when first seen she had bronchitis of only very moderate severity T 99.2. P 96 R 26. As her residence was some distance out of our round she was not seen on the second day. Calling on the 3rd day we found that on the previous evening she had become much worse and a practitioner in the immediate neighbourhood had been called in. He had diagnosed meningitis, advised shaving the head and so on. She certainly presented a typical picture of meningitis, as she lay with head rigidly drawn back, half opened glassy eye-balls, with dilated pupils and divergent squint. She could only be roused with difficulty, had to be very carefully fed to avoid choking and at once relapsed to unconsciousness. T. 102 ^{0} Pulse 120 R.56. The abdomen was indrawn and the Tache cerebrale well marked. Reflexes could not be elicted. On the fourth day her condition

was practically unchanged.

On the 5th day she was more conscious and the pupils reacted to light. The squint and other conditions remained as before. Her lungs were found to have many pneumonic patches throughout especially on the left side.

6th day. Head quite moveable, pupils normal, other reflexes weak but could be elicited T 103. P 130. R 60.

It was now obviously a case of bad broncho pneumonia which came to a fortunate ending sooner than one might have expected from its severity. Some fluid which collected in the left pleura absorbed rather slowly but with no signs (in temperature sweating or so on) if pus formation.

Within three weeks she was running about. This case is of a type of meningism common in infective diseases. Beginning at the onset of the primary disease with very rapid rise of temperature and symptoms otherwise well

marked, these cases clear up just as rapidly as soon as the primary disease emphatically declares itself.

One other toxic condition with which meningism is associated is uraemia. Garrod details one case at length and refers to some others. I have had no experience of the condition. But the connection seems to point once more to a chemical poison as the ultimate cause.

Diagnosis without a knowledge of causation and in a condition with no perceptible anatomical change cannot be very accurate. The difficulty is of course the differential diagnosis from meningitis. This in the event is easy. The rapid and favourable termination of one condition contrasts so strongly with the fatal or worse than fatal result of the other. But at the beginning of the symptoms when it is very desirable to relieve the

anxiety of parents and to maintain our prophetic reputations differentation is very difficult. For my part in many cases I have erred and even 'ahint the Laun' cannot see where I could have been wiser. At the best I can only give some general indications which seem to me to point with varying significance this way or that.

According to some lumbar puncture is the one sure way of diagnosis and should be adopted in every case.

In a large majority of the cases which we see in this district lumbar puncture is in my opinion impracticable, and my experience of it is very small. But even where adopted its information in early stages is frequently very inconclusive. If bacteria are found in the fluid the matter is settled, but in many cases of septic meningitis and in all cases of tubercular meningitis bacteria are only found after several days illness, and by that time the problem is solved

clinically.

In the absence of microbes, increased pressure of the cerebro-spinal fluid and more than average fibrin point to meningitis. But those conditions may exist in pneumonia and the infective fevers without meningitis. The one indication from lumbar puncture which does not vary is to be found in the result. In meningism it effects marked and permanent improvement;in meningitis there may be improvement bit it is very temporary. Examination of the cerebro-spinal fluid is of most use in septic cases and must be of great service when doubtful meningeal signs are associated with middle ear disease. I have nothing further to say concerning lumbar puncture and having dismissed it will try to follow the conventional order.

In the Family History valuable indications may be found. Meningism occurs nearly always in the children of very neurotic parents and very often in those whose neurosis is due to alcoholic excess. But those are children

who are badly cared for and have little reserve power and are therefore liable to all diseases including meningitis. Still I would include a neurotic parentage as pointing to meningism.

Meningismal children are themselves usually of easily excitable nature. Several cases are recorded in children who had previously had chorea and in almost all it will be found that the child had previously had fits or some other evidence of nerve irritability. Those cases of which we sometimes hear and in which the child is said to have had meningitis three times or oftener are cases of meningism and a fresh attack would carry the presumption that it was the same. But attacks of meningism do not preclude meningitis. Still a history of previous attack would incline one towards meningism.

The general condition of the child and the existence or non-existence of other diseases may be of importance. Meningitis attacks more readily weakly

children suffering from slow, long standing illnesses and on the other hand may be ushered in by a long period of malaise and loss of flesh. Meningism may attack the apparently quite robust and is more likely to be associated with the very earliest stages of acute diseases. Tylecote says that symptoms of meningitis in the first few days of measles are meningism but in the later stages are meningitis and this accords with my limited experience, So also with other diseases, symptoms arising at the onset are probably meningismal but during retrogression of the fever or the period of convalescence the same symptoms would almost certainly prove meningitis.

Meningitis varies greatly in its form of attack. We find it striking children, apparently healthy, laying them low and rushing them through the gate of unconsciousness to death with almost breathless haste. And on the other hand we have cases of much more slow and gradual onset, children who loose flesh for days or weeks, complain of headaches and have flushings and pallors before showing definite sign of cerebral irritation. The following case

may serve to illustrate both this gradual onset and the relation to pneumonia of meningitis as contrasted with the pneumonia meningism case already recorded.

A boy of four, of previous good health had a sharp rise of temperature. When examined fine crepetus was found at both basis, T.102 P 120 R 40. For four days he remained in much the same condition, with T. P. and R. tending to improve, but looking pale and ill.

On the 6th day his breathing was practically normal but his pulse was still fast, (100) and of poor quality and he looked pale and ill. As his family history was very bad, his father having died of phthisis and his mother suffered from hip joint disease, he was watched with a special outlook for tubercular manifestations.

For the next ten days there was little change. The temperature kept practically normal, never going above 99.4°. Some days he was a little better, next day not so well. About

that time he began to sweat profusely, especially about the head. No physical signs of pulmonary disease could be discovered. His mother said she thought he was at times much more stupid than formerly and that he sometimes had acute headaches, but there was no evidence of that during our visits. Three weeks after the beginning of his illness he had slight convergent squint, with some bulging of the fontanelle, which was very open for a child of his age. At the same time his temperature rose slightly , on some occasions over 100° while the pulse tended to become slower. The abdomen was indrawn and the Tache cerebrale well marked. Abdominal, cremasteric and patellar reflexes could all be elicited, though the mussles were very feeble. The pupils reacted very slowly. Kernig's sign was absent. For four days he scarcely varied except that his pulse became slower and irregular, varying from five to ten beats in five seconds. At the end of that time he became comatose and in a

few hours died. The hydrocephalic cry was never marked in our presence.

The diagnosis in this case presented no great difficulty and from the beginning a doubtful prognosis was given, although for some days we were in doubt as to which organ the tubercle was going to attack.

The onset of miningism is always acute and the symptoms throughout take a regular course and do not show the marked fluctuations so common in meningitis. Most general practitioners have like myself attended children with whom we saw very little wrong, but of whom the mother poured into our ears a tale of how bad the bairn had been just before our arrival or just after our previous departure, how his eyes had turned, how he moaned and "whinged" while not knowing or seeing anyone, and how his colour had come and gone, now on one side of the face and then on the other. And we have discounted much of her tale on the ground

of maternal anxiety. But a day or two later our arrival and the bad turn came together and we recognised a definite meningitis. In the very earliest days of my practice I was called on urgency to see a child who was under the care of a neighbour whom I then considered and still believe to be the ablest general practitioner I have ever known. I was told that the child had grown much worse since he saw it an hour earlier. There was no difficulty in diagnosing meningitis. Convergent squint bulging fontanelle, dilated fixed pupils, rigid neck, indrawn abdomen, Tache cerebrale, irregular pulse, and hydrocephatic cry all spoke with sufficient clearness. I phoned him and was told that he was only attending because the mother seemed worried and had I not given him this grave report he would have scored it off his list. Two days later the child died.

I hope I have profited by

the lesson. Meningism does not show these variations nor does it show marked fluctuations of pulse and temperature.

In different cases it may be associated with high or moderate temperature but not in any one case with the great and rapid variations which occur in meningitis. The pulse - respiration ratio is seldom interfered with unless the interference is due to the primary disease as for example pneumonia.

The character of the pulse in meningitis is always important and I have never seen in meningism anything like the slow irregular pulse so common in the more serious condition. I would consider a slow pulse with marked variations of rate a certain indication of meningitis.

All or nearly all the typical signs of meningitis may be seen in meningism, but with varying frequency. Rigidty of the neck with retraction of

the head is very common. Tylecote asserts that this condition in an exaggerated form makes the disgnosis of meningism safe and sure. The hydrocephalic cry is also quite usual. Optic neuritis has been found to occur but probably as an accidental accompaniment. Rétinoscopy of a restless, irritable infant is very difficult and probably beyond the resources of most general practitioners. When it can be used the information gained is of great value but not absolutely conclusive, whether the result be positive or negative. Thepresence of optic neuritis certainly gives a strong presumption of meningitis, but its absence is of less value. We have recently had under our care a case of meningitis in which the retina was examined at various periods of the illness without nay sign of neuritis being detected. The case was probably of pneumococcic origin and recovered perfectly but was a well-marked meningitis. We have had two other cases where at a late stage the ophthalmoscope gave a negative result.

Others of the classic signs of meningitis are rare or much less marked in meningism. The indrawn abdomen and Tache cerebrale may be specially mentioned, while the hyperaesthesias which are so common, especially in cerebro-spinal meningitis, never occur in meningism. But local hyperaesthesia is elusive when examining a young child suffering from serious illness and naturally irritable and cross. Loss of body weight gives a strong indication of meningitis but may be fully accounted for by the accompanying disease in meningism.

As I draw near my conclusion it is evident that I know of no sign which will in every case differentiate these conditions. A few years ago I believe I had found that in Kernigs sign, but since then I have seen well-marked cases of meningitis both tubercular and septic in which this sign was never present and on the other hand it can be elicited in many very young children who are in perfect health.

Only by a close examination of all the facts can we approach accuracy of diagnosis and even then may fail to reach it.

So far as treatment is concerned I do not know that the differential diagnosis makes much difference. In addition to general measures I prescribe small doses of calomel repeated to purgation having belief in its antiseptic action on the bowel, and combine with it phenazone for its sedative effect. This line of treatment does well in meningism and in meningitis can do no harm.

I feel that a thesis with conclusions so indefinite requires apology. It was not written primarily with a view to the degree but because I was interested, and to read to a small medical club. Because my fellow members believed it had some value I am encouraged to send it forward.