

## POLIOMYELITIS AND ITS TREATMENT

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Anterior poliomyelitis or infantile paralysis is an acute inflammation of the anterior horns of the spinal grey matter giving rise to flaccid paralysis. The disease may be epidemic or sporadic.

Serious outbreaks occur from time to time in America, Norway, Sweden etc. Speaking on polio, Professor Sabin in his lectures in New Delhi, has very correctly said, 'after taking a huge toll of the life in European countries the disease is now on its march towards Asian borders.' In India cases have been reported recently but the disease has so rapidly spread that now we have a huge number of cases and a host of Poliochildren crippled and disabled by this hedious disease.

Both forms generally appear in late summer or autumn. Out of these the epidemic form attacks both children and adults and is often fatal. The sporadic form, though its after effects are often lamentable, is very rarely fatal. In the epidemic form, the diaphragm and intercostal muscles may be affected and the patient may die from respiratory paralysis. Children between the ages of 1 and 4 years are most often attacked, this is the reason sometimes the disease is known as infantile paralysis; though actually speaking no age is immune.

The disease is contagious and it may be spread by 'carriers' as well as by those who are in incubation period or in early stages of the disease. It may be spread by droplet infection from the nasopharynx or via the faeces, the latter now being thought the principal mode of conveyance. In short it can be said that this can be transmitted by ingestion and/or inhalation of the virus. (The virus is the minute body smaller than bacteria which can exit only in living cells, recent researches have revealed that three types of viruses—Brunhilde, Lansing and Leon—may cause poliomyelitis entering by way of the gastro-intestinal tract or the nose and throat).

Much discussion arises as to the way in which the virus

reaches the central nervous system. It was originally thought that the olfactory nerve was the route but it is now considered that the micro-organism travels from intestine along the sympathetic nerve fibres to the spinal cord and from the naso-pharynx along the fibres of fifth, ninth and tenth cranial nerves which innervate this region to the brain stem.

It appears that once the patient is affected by the condition the virus loses its virulence and there is little danger of infection. So it can be said that lifelong immunity is gained by one attack.

The lesions produced by the virus have a certain definite distribution. In the spinal cord the lumbar enlargement is most commonly attacked, the cervical is attacked less commonly. Though the micro-organism sometimes invades posterior horn and posterior nerve root ganglion cells also but it has got special affinity for the cells of the anterior horn. In the brain, the cells affected are usually those of the nuclei in mid-brain, pons and medulla. The cortex is not often attacked but when it is, the pyramidal cells of the motor area are most usually involved. The meninges are also sometimes affected.

With the effect of the affection the blood vessels in this region become engorged and inflamed and the membranes around the affected part become hyperaemic. At first the large motor cells of the anterior horns hypertrophy and later they degenerate. This degeneration spreads to the anterior nerve roots and to the nerve trunks. The nervous elements are thus destroyed and the neuraglia, which is increased in amount, takes their place.

Now as a result of the destruction of these neurones, the muscles cut off from the trophic centres, also show signs of degeneration. They become flaccid and atrophy sets in early. If a whole muscle is thus destroyed it ends by becoming merely a fibrous and fatty mass.

If the grey matter of the higher centres is attacked Polio-encephalitis or bulbar form poliomyelitis is resulted. The nuclei of the cranial nerves are generally involved, particularly the facial nerve and the abducens oculi. At the same time there may be a lesion in the cord also. It has been found common following tonsillectomy.

*Signs and Symptoms.*

All patients who contract the disease do not suffer from paralysis. So the outward evidence of the lesion will vary from patient to patient with the site and extent of pathological change and with the speed at which immunity is acquired. It is sometimes possible to divide the signs and symptoms into the pre-paralytic and paralytic stages, though some cases do not show the first or at least it may be mild and unrecognised and many do not reach the second, these being the fortunate abortive or non-paralytic cases. Patients suffering from the abortive form get only a febrile attack or may develop symptoms resembling meningitis, which soon pass off. Probably many people acquire immunity through an unrecognised abortive form only.

In case of the bulbar form i.e. polio-encephalitis in which one or more of the nuclei of the cranial nerves are involved, the nerves of the larynx and pharynx are also affected. In that condition to save the life patient is nursed in a respirator. The mortality is much more in these cases.

The various clinical pictures for the sake of easy understanding can be divided into the stages as follows—

*General Infection*

The first symptoms of the infection are fever, in which temperature goes up to 103 degrees and does not commonly last for more than 3 to 4 days but cases with persistent low-grade fever lasting for 2 to 3 weeks also have been noted in some recent epidemics; and malaise, headache, drowsiness or insomnia, sweating, flushing, facial congestion with a sore throat and often gastro-intestinal disturbances such as anorexia, vomiting and diarrhoea.

*Meningitic Irritation*

This stage is marked by headache, backache, pain in the limbs, muscular twitchings and rigidity of the spine. The child is often tremulous and Kernig's sign may be observed. In the absence of such marked signs of meningeal irritation the spinal sign is of diagnostic value (Russel Brain). In addition to these the patient may be flushed and bright eyed with general restless

hyperexcitability or in severe cases there may be head retraction and opisthotonos in a patient who is drowsy but irritable. These symptoms usually overlap those of general infection but they may be postponed until one or two days after the fever has died down. This purely meningitic stage may last only for a few hours before the paralysis or may persist alone for several days.

In these nonparalytic cases the patient recovers after exhibiting in mild or more severe form one or both of the phases of the pre-paralytic stage.

#### *The Paralytic Stage*

The onset of paralysis usually is ushered in by muscular fasciculation and follows rapidly upon the preparalytic stage and generally considerable pain in the limbs and tenderness of the muscles on pressure and shock like contractions of the muscles are present. There are usually no paraesthesiae of tingling or numbness.

The paralysis is often very extensive at first and may involve all the four limbs and the trunk. This is because of the simple factor that during the acute stage many cells are not actually destroyed but are compressed by the products of the inflammation and thus temporarily put out of action; others, though infected with the virus are not so seriously damaged as to be incapable of recovery. When the paralysis is extensive its asymmetry and patchy character are important features. Some muscles may be severely affected on one side of the body and escape injury on the other side. Usually the maximum damage is done within the first twenty four hours but sometimes the paralysis is progressive. As the inflammation subsides, the compressed cells gradually resume their activities and the spasm and tenderness in the muscles diminish. All the four limbs may become the victim of the paralysis in different degrees or only one muscle group or even a single muscle may be involved. The lower limbs are more frequently affected than the upper ones, the anterior tibial group and peronei being most often paralysed. Next to these in frequency come the quadriceps and glutei. In the arm the deltoid is often the chief sufferer. The paralysis may be symmetrical or asymmetrical but as said before it is more often the latter, for example, the

anterior tibial group may be affected in one leg and quadriceps in the other.

Spinal or abdominal and respiratory muscles may also be affected. If the respiratory muscles are involved, the patient will suffer from dyspnoea and expiratory efforts such as coughing may be affected. Even death may occur in such cases.

The weakened muscles are always completely flaccid, their tendon reflexes are always early abolished. The planter responses are usually normal. When the legs and lower trunk muscles are badly paralysed there may be retention of urine for 2 to 3 days. Usually there is no sensory impairment but only in a very few cases in which there is quite exceptionally widespread inflammation of the spinal cord, transitory sensory loss chiefly to pain and temperature may be observed. Though very rarely but transitory extensor responses and cervical sympathetic paralysis have also been observed.

#### *Chronic Stage*

In chronic stage the flaccid muscles soon atrophy, due to defective circulation; the affected parts look cold and blue. Tropic changes may taken place in the skin and nails, shortening of the limb, which will be due to the arrested growth of the bone, may also be present. The reflexes are lost in the affected parts and reaction of degeneration is present. In the later stages deformities tend to develop which are due to muscle imbalance and is often assisted by the gravity. The sphincters are usually unaffected and sensations remain normal. Secondary changes in the lungs or urinary tract may or may not occur. As you know the lesions are more extensive in the epidemic form, symptoms are also more serious in these cases.

Other clinical forms of the poliomyelitis may be described as the cerebral form, cerebellar form, neurotic form and abortive or non-paralytic form.

#### *Diagnosis*

For proper treatment accurate diagnosis is of great importance. In infants, first of all we will see the immobility of one limb but this may be due to some other reasons also such as acute osteomyelitis or scurvy with haemorrhage under the periosteum

of one of the bones; but usually the distinguishing local signs are swelling and extreme tenderness which distinguish this condition from poliomyelitis.

Sudden muscular paralysis with pain in the weakened limb may also result from acute rheumatism but the distinguishing points are that in this condition the tendon reflexes are always present and usually brisk. Acute myelitis and haematomyelia both, also lead to sudden motor weakness but loss of sensibility and of sphincters control with extensor planter responses are also present in these cases.

Severe chorea in a child may lead to complete loss of all voluntary movements in a flaccid limb. In this general restlessness may be severe but meningism is absent.

If the patient comes in chronic stage, i.e. years after the acute attack the presence of muscular wasting may also suggest progressive muscular atrophy, myopathy or syringomyelia but to exclude all these alternatives, mind well that the wasting is not progressive in polio cases. The absence of fibrillations is also helpful to distinguish it from the progressive muscular atrophy. The absence of sensory loss is a distinguishable sign from syringomyelia.

The bulbar form also may not be confused with other forms of encephalitis. Here you will see that in the encephalitis lethargica the onset is usually less acute, signs of meningeal irritation are absent and pupillary disturbances are almost constant.

#### *Prognosis*

In round figures it may be stated that half of all patients who are clinically infected with poliomyelitis have no paralysis at any time. Of those with paralysis—the mortality varies in epidemics and may reach 10 to 25 per cent (main cause of the death is usually respiratory paralysis). The mortality rate is highest in the first year of life and in those who are attacked after the fifth year (Russel Brain); 30 per cent of cases recover, 30 per cent have moderate permanent paralysis and 30 per cent have severe permanent paralysis.

*(To be continued)*

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### *Treatment*

#### **GENERAL TREATMENT**

This is of great importance and is usually carried out by the nursing staff, of course, under the direct prescription and supervision of the physician. The most essential feature of the treatment during the acute illness which lasts from 4 to 6 weeks is that immediate and complete rest should be insisted on in every suspected case. This is partly because the condition is an inflammatory one and partly because the fate of the hundreds of nerve cells depends upon the absence of fatigue. It has been seen that the physical activities in the pre-paralytic stage increases the risk of severe paralysis. During this stage care should be taken to avoid respiratory complications. Care of muscles and joints is also very essential.

In patients in whom the brain stem is involved, avoidance of chest complications is of practical importance. If there is difficulty only in breathing with no difficulty in swallowing the patient may be nursed in a tank respirator, so that his vital capacity is not reduced dangerously.

The principal object in the treatment of the muscular paralysis during acute stage remains to prevent the stretching of the paralysed muscles and contractures of their antagonists. The patient should be nursed on a firm bed and the limb kept in optimum positions so that the paralysed muscles are relaxed. This can be obtained by means of sand bags, improvised splints etc. If respiration is hampered the position of the patient in bed becomes of vital importance. The semi-prone position is often used, first on one side and then on the other, and foot of the bed is elevated so that it makes an angle of 15-20 degrees with the horizontal. This will help in preventing secretions from draining into the lungs. In case the elimination of the secretion is difficult mechanical sucker may be used to serve the purpose. When the upper

extremity is involved special care should be taken to keep the shoulder abducted to a right angle, elbow semiflexed, wrist dorsiflexed, thumb in opposition and fingers slightly flexed. To do this the arm may be fixed to the head of the bed with a sling or some towel etc. may be put in between the arm and the body. When lower extremity is involved outward rotation of the limb, flexion of the hip and knee and dropping and inversion of the foot must be prevented—patient is put in optimum position lying on his back with hip and knee slightly flexed by a very small pillow under the knee, foot is kept in dorsiflexion to a right angle; neither inverted nor everted.

In early acute stage so long the limbs are tender and painful, hot packs may be used to relieve pain and spasm (Sister Kenny's treatment). If there is severe paralysis of legs and trunk a careful watch should be kept for retention of urine and catheterization every eight hourly or so may be needed.

#### *The Role of Homœopathy*

Homœopathy perfectly proves to be godsent to the patients if patient has come under its treatment in genuine hands and in time. We certainly do not pretend for eliminating all sorts of paralysis of polio especially those which have already settled definitely. However, Homœopathy certainly helps us to avoid, elude and minimize the evolution of this sickness, whereas our professional brethren in allopathic thought of school has almost declared that the diseases respond to no medicines and western scientists have realised the worthlessness of their medicines. As you have seen in early stages the disease presents confusing manifestations so Allopaths are at a loss to take up the case properly because they have to diagnose first in order to establish the treatment whereas Homœopaths even if they find themselves in the impossibility of diagnosing will draw conclusions on the treatment from the way the patient feels himself. With an early interference a Homœopath will have a chance of the possibility of deviating the evolution of the disease and even often elude the disease without knowing it.

To transpose the different phases of poliomyelitis on a homœopathic plan let us classify it as follows—



Though the incubation period, as you all know, is not clearly defined, we can divide the disease into three phases for our easy understanding, as Dr. Jean Fallex has very nicely classified it—

- (1) The phase of favouring and determining phenomena.
- (2) The phase called Anonymous where polio does not declare itself.
- (3) Lastly the phase of paralysis where diagnosis can be made but unfortunately too late.

In the first phase of the favouring and determinant phenomena coldness, humidity and fatigue are the common causes which favour and determine the expectation of poliomyelitis or other diseases. Though these causative factors may be of no indication for allopaths, Homœopathy helps us to act immediately on the state brought about by the indisposing factors. For example—Coldness will make us to prescribe Aconitum. Humidity will make us to think of Dulcamara or Rhus tox whereas the cold bath of a pool or river for Antimonium crud. and Fatigue—Arnica.

Though by this time we might not have been able to diagnose the disease but we have a great chance to eliminate the developing disease by administering these different remedies.

Now in anonymous stage also we are well versed to introduce our wonderful remedies like Apis mel; Ars; Belladonna; Bry; Baryta carb; Causticum; Cicuta virosa; Eupator perf; Gelsemium Fer. phos; Lachesis; Mercurius; Phos; Phytolacca etc. etc., which will very well serve a twofold purpose firstly the administration of the remedies during the anonymous stage may help you to avoid paralysis and secondly if at all you get the case when the paralysis is settling, these are still most valuable to stop it or at least to regress it.

For comparative study you will see that, at the most, allopaths will prescribe in general a course of antibiotics and nothing more, that too where angina, flue or meningeal reaction is evident.

Even for the third phase we have got remedies like Allumina, Conium, Cocculus; Gel; Hypericum; Hyd. acid; Curare; Oxalic acid; Plumbum; Phytostigma; Lathy; Thallium and so many others which have got their own therapeutic answer for every form and localisation of the paralysis. But mind well this is only when the

practitioner is intelligent enough to recognise, to distinguish and handle them.

Without going into much details here I will try to give outlines and redline symptoms of some very important, valuable and useful remedies:—

**GELSEMIUM**—It is one of our best remedies in infantile paralysis (Dewey) and is known as king of polio (Kent) practically prescribed in anonymous stage or phase or paralytic phase. Gelsemium contains Gelsemine which being a violent poison acts by paralysing the motor centres anterior horns and respiratory centres. Acts by passive congestion both in arteries and veins. Patient has violent shivers which originate in the vertebral column. Many groups of muscles in particular the soft portion of the palate and the eyelids are paralysed. Due to paralysis of muscles of fingers and feet muscular control is lost; stool and urine passes freely and involuntarily.

**BRYONIA**—Produces oozing of the serous membranes; patient presents chronic headaches with pain in the vertebral column; photophobia. Symptoms aggravated with motion but improved with absolute rest. Bry dries mucous membranes, causes constipation with hard faeces.

**APIS MEL.**—Besides chronic headaches patient presents maladroitness of the hands; drops objects from the hands, staggers in spite of fever, not thirsty; passes watery, yellowish involuntary evacuations.

**RHUS TOX.**—Hahnemann commented on the power of Rhus tox in curing paralysis of lower extremity and of great use in acute infantile paralysis. Cephalalgia with rachialgia of dorsal lumber region; sensation of bruise with gnawing of the muscles accompanied with a state of typhos. Buillious and exhausting diarrhoea with involuntary stools, urine passes sluggishly.

Rhus; Sulphur and Causticum have paralysis from cold.

**LACHESIS**—Angina and meningial reaction, acts on nervous centres by paralysing them; Fetid sanguinolent diarrhoea.

**CICUTA VIROSA**—An important remedy for the meningeal reaction with a stiff neck. Action is similar to Curare which provokes equally a paralysis of respiratory muscles.

**ARS. ALB.**—Involves muscles of the hands and forearm rarely

exceeding the elbow; abundant, burning, exhausting, blackish diarrhoea. Patient thirsty, swallow small quantity of water and immediately vomits out.

**PHOSPHORUS**—Dr. Arunphy thinks phosphorus as a homœopathic gift to all forms of paralysis, patient presents walking difficulties; leg movements incoordinated, rachialgia settles with burning sensations and sluggishness. Abundant diarrhoea with involuntary bowels. Patient very thirsty and swallows large quantities of cold water in a gulp, which may be vomited out a few minutes later.

**MAG. SULPH.**—Releases the paralysis settled on the upper part of the body and will mainly interest the lower part of the body.

To approach in paralytic stage following are the remedies of interest:—

**LATHYRUS**—Acts on anterior horns and lateral horns. Lower extremities involved, patient walks leaning forward; muscular atrophy present.

*Cicuta virosa* acts on the motor and respiratory nerves particularly the diaphragm.

*Conium maculatum*—in this case paralysis starts at inferior extremities with slight shivering in the beginning which is followed with sluggishness of sensations. Shortening of the tendons present.

**THALLIUM**—muscular atrophy of fingers and toes spreading to the legs and thighs, perinium and abdomen.

**COCCULUS**—Neck and back muscles weak, feet and hands stiffened.

**PLUMBUM**—Paralysis of the flexor and extensor muscles especially in the forearm, wrist drop. Does not give good results in lower extremity involvement.

Hydrocyanic acid is one of the important remedies to be remembered for the paralysis of respiratory centres.

In addition to this list of remedies *Calc. c.*; *Chrom. s.*; *Nux v.*; *Sec.*; *Bungarus*; *Kali phos* etc. are also of great value.

#### *Prophylaxis*

1. During epidemic periods care should be taken that any person with headache, meningitic irritability, malaise, restlessness

and fever is at once made to rest in bed and is nursed with full typhoid-like precautions.

2. Virus is present in the stools upto 3 weeks after the onset in 50 per cent of patients, and in about 25 per cent of the cases it is found upto 5 to 6 weeks after the onset. So it is not easy to say how long the patient remains infectious. It is better that he should be isolated from other children for at least six weeks.

*Value of the Salk Vaccine and Lathyrus as Prophylactic Measure*

The salk vaccine is gaining good publicity day by day and we also do admit that it has reduced the number of paralytic cases but at the same time on the other hand several hundred children has developed polio because they received the vaccine before it was perfected. In the words of Dr. Russel Brain—the value of vaccine is now established but the dangers of immunization with a living virus have not yet been entirely overcome. This shows that it has not been perfected yet. But Homœopathic physicians have got a really safe and better polio preventive in *Lathyrus sativa*, of course when given properly. In Dr. A. Dwight Smith's words. "This preventive is absolutely without danger and will probably give immunity for a life time instead two years of the salk vaccine."

According to Dr. A. D. Smith, if it is given 200, the first year; 1m the second and 10m the third year, it is going to last a lifetime. Dr. Hubbard is of the opinion that 30, 200, 1m one month—four weeks apart, one dose of each and the next year one dose 1m or 10m is enough.

But Dr. F. K. Bellokossy says that we should wait at least four months because the sensitization lasts four months, he further says, if given it will not be according to the science of allergy and giving before the sensitization period is over may mean aggravating the patient. My personal view is also that as the patient is oversensitive to *Lathyrus* within first four months so we should not give it more often than every four months. Further I would like to suggest to my professional brethren to keep up the records and publish it time to time for more accuracy and understanding.

*Suggestions*

In cases where the paralysis has fully settled, and we are also not in a position to pretend its elimination, along with Homœopathic therapy, medical world has got a hope to make many a cripple to stand on their legs, use their arms and hands freely and to have their respectful place in the society i.e. to rehabilitate him. To take these physical wrecks emaciated and chronic invalids out of the ruts; the most modern techniques like Physiotherapy (i.e. treatment through physical agents); Occupational therapy (treatment through purposeful work or activities) and Orthopaedic surgery are of great value.

These techniques consist of—(i) Remedial Exercises (ii) Massage, (iii) Electrotherapy, (iv) Splints and calipers; and (v) Surgical inventions.

Actually speaking if physiotherapy, occupational therapy is started from the very acute stage along with Homœopathic treatment it will prove to be of immense value.

Let us discuss in short the role of these different therapeutics—

(i) *Remedial exercises*—Movement is life. The movements of muscles and joints have a mechanical pumping effect which assist venous and lymphatic return. Mobility and range of movement and power of the muscles can very well be maintained and increased by all forms of movements. Not only that, but these will help to prevent deformities and other complications and will improve the balance and coordination. And further, exercise vitalises the dormant neurones and is of great value in exciting the cells of the motor areas. The use of mass movement pattern (Kabat's technique) and reversal of antagonists and possibly of primitive reflex movements. (Sherrington's technique) will all increase the bombardment of cells of the anterior horns of the spinal cord and thus activate the muscles. Pool therapy and suspension therapy in which exercises are given in pool and suspension respectively are very useful to the patients for increasing muscle power.

(ii) *Massage*—It consists of various manipulations like stroking, effleurage, tapping, hacking, kneading, rubbing etc. etc. Although the various techniques produce slightly different effects

but overall it increases the circulation, stimulates the functions of the skin and promotes the nutritive changes in the muscles.

(iii) *Electrotherapy*—It is the treatment by means of electricity. Dr. J. Montgomery Moster writes that in the treatment of the poliomyelitis there is no such agent as electricity and the use of galvanic current in the treatment is imperative.

Electricity serves as a most useful agent for carrying out tests for muscular weakness, denervated fibres and reaction of degeneration not only for the purpose of diagnosis but to ascertain the improvement from time to time during the treatment. Other modalities of electrotherapy like Ultra violet rays help to tone up the entire system, infra red irradiation to increase the circulation of the part and to remove spasmodic conditions specially when the child's limb is very cold.; faradic to strengthen the muscles, galvanic to check the degeneration, sinusoidal to tone up the nerves have proved to be most valuable.

*HYDROTHERAPY*—Medical world is thankful to the sincere and indefatigable labour of Dr. Baruch of New York for calling the attention to the great therapeutic value of water in the treatment of both acute and chronic diseases: cold compresses and packs help to reduce the fever, neutral baths have sedative effects on nerves, abdominal wet bandages relieves the constipation, hot and cold fomentation or sprays and full lengths baths help us in softening the tissue and in overcoming the contractures.

Splints braces and other appliances—these are different orthopaedical aids. The purpose of these external appliances is to support the limbs, to bring the body in alignment and to prevent the deformities and complications.

*Orthopaedic surgical intervention*—Surgery is called upon generally in neglected and ill treated cases where the patient has become a victim of contractures and deformities. Two main groups of operations are available (i) arthrodesis of joints which is a valuable method of stabilising the joint that has lost their muscle control. This method is particularly applicable to shoulder, elbow, wrist, spine, ankle and foot. (ii) Second is Muscle transfer: the object of which is to use a healthy muscle to replace the function of one that is paralysed, e.g. pectoralis major muscles is transferred to replace the function of paralysed elbow flexors.

This brings us to conclude that if a Homœopath works as team member of the rehabilitation team he can do a lot for the crippled and down trodden children—the victims of the poliomyelitis. *(Concluded)*

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new cases of gonorrhœa in both sexes attending the clinics when compared with the previous year: from 16,377 to 19,620 in males, and from 4011 to 4761 in females. The report concluded that penicillin cannot by itself make a lasting impression on the incidence of this disease. One might truly term this a masterly understatement of the case. Even when treatment was changed from penicillin to streptomycin the failures recorded at the Liverpool clinic increased from 2.3 per cent. in 1954 to 4.9 in 1955 and to 7.0 in 1956.

—*The Layman Speaks, Aug., '59*