MEMORANDUM ON THE OUTBREAK AMONGST THE NURSES AT ADDINGTON HOSPITAL, DURBAN

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Since considerable press publicity, not always accurate, has been devoted to the distressing outbreak amongst the nurses at Addington Hospital, it may be of interest at this stage to present a short interim report on the position to date, as a guide to the detection of similar cases which might occur in other parts of the Union.

The outbreak commenced towards the end of a recognized poliomyelitis epidemic, but it does not bear more than a superficial resemblance to this disease. In many respects it resembles other outbreaks coinciding with poliomyelitis epidemics which have been reported in the literature.

At the time of writing there has been a total of 84 cases connected with the Nurses' Home at Addington Hospital. The disease has shown a marked predilection for the age-group 18 to 25 years, although some of the more recent cases have belonged to an older age-group. A point of interest is that the disease has not affected any other hospital personnel and, so far as can be ascertained, no ward patients.

The first nurse with signs of the disease reported sick on 8 February 1955, the second on 14 February. Thereafter, in the 7 days 18 to 25 February, no less than 59 cases occurred. This would appear to have been the 'explosive' period and since then the incidence has tended to be more sporadic. The pathogenesis of the disease is still in doubt but, assuming it to be infective in origin, it would seem that the incubation period is between 7 and 21 days.

Clinical Picture

It should be stated at the outset that there has been considerable variation in the severity of the disease. In some cases symptoms and signs have been minimal and recovery rapid; in others, the illness has proved extremely debilitating and protracted. In the majority there have been two distinct phases, viz. the prodromal phase and the acute phase:

(*a*) *Prodromal Phase.* Prodromal symptoms usually occur up to 14 days preceding the onset of the acute phase. They include the following: Headache, extreme lassitude, sore throat, sore eyes, nausea, vomiting, diarrhoea, backache, and coryza.

(*b*) *Acute Phase.* This is ushered in, often dramatically, by sudden weakness, and a feeling of heaviness in one or more extremities, predominantly on the left side. In most cases severe backache, headache and lassitude are present, whilst severe shoulder-girdle and subcostal pain are common features. Other symptoms are stiff neck, tingling in the extremities, and muscle cramps. Six cases have had bladder symptoms.

Physical Findings

General. A low-grade fever, not above 100° F, and not lasting more than 48 hours, is present in most cases. A few appear ill but, in the majority, systemic disturbance is minimal.

Special. There have been no signs of meningeal irritation, and no evidence of bulbar involvement. True neck rigidity has not been found. In a few cases a mild facial muscular weakness has presented, associated with a patchy diminution of sensation. Otherwise the cranial nerves are intact. A distinctive feature has been a marked disinclination or inability to sit up in bed,

due to pain and weakness in the back and abdominal muscles.

The most striking changes are found in the muscles of the affected limbs. Individual muscles or groups of muscles are extremely painful and tender on handling, and of a definite 'rubbery' consistency. Both proximal and distal groups are liable to be involved.

The affected muscles initially show a flaccid paresis, in which weakness is marked. Later the muscles become hypertonic, although a few progress to a true flaccid paralysis. In the hypertonic phase, although weakness is still severe, the muscles contract sluggishly. This pattern of contraction appears to be conditioned by pain and by failure of the opposing muscle-groups to relax. When tested against resistance, the muscles contract in a curious interrupted or clonic-like fashion. Initially the reflexes are depressed, but never absent. As the muscles become hypertonic the reflexes return to normal or, more commonly, become exaggerated. No other abnormal reflexes have been found.

Patchy areas of diminished sensation, which do not conform to any anatomical pattern, are usually found over the affected muscle-groups, but may occur elsewhere. In many, vibration and position sense is impaired.

Progress of Illness to Date

Severe headache has been a persistent symptom in many cases, even up to 4 or 5 weeks, and in some nausea and vomiting have continued. The persistence of these symptoms has seemed to indicate that the disease is still active and that further paresis may occur. In some cases weakness has spread to other muscle-groups, even after a lapse of several weeks.

Experience has shown that the hypertonic state of the muscles is aggravated by any form of activity and we would stress that physiotherapy is definitely contra-indicated. Attention to posture in bed, however, is important to guard against deformity. Where physiotherapy has been tried relapses have occurred or progress has been retarded. Day-to-day variation in the degree of paresis has been noted, but to date there has been no detectable wasting of the affected muscle-groups. Some degree of diminished sensation has tended to persist.

Management

This may be summarized as follows: Isolation for 3 weeks, complete bed rest, and control of posture in bed. It is a protracted and somewhat frightening illness, and constant reassurance and encouragement are important.

Special Investigations

The cerebrospinal fluid has been completely normal in all but a very small minority of cases, in which a slight increase in globulin was found. Repeat CSF investigations during the course of the illness have also been negative. Full haematological, biochemical, toxicological, and virus studies to date have all yielded negative results.

The electrical reactions of nerves and muscles have been examined, and the findings are being assessed. Muscle biopsies have also been performed.

Investigations are continuing in an endeavour to discover the aetiology of the disease, and to determine the precise site of the lesion.

OUTSIDE CASES

Twenty cases have been admitted to hospital from the Durban area, exhibiting a similar clinical picture and, since the attention of local practitioners has been drawn to the condition, other suspects have been reported. There are indications, also, that isolated cases may have occurred prior to the Addington outbreak.

RACE, SEX AND AGE

The outbreak being mainly confined to nurses, of the 104 cases 92 were females and 12 were males. The females were all of the child-bearing age, and no cases have occurred in children or in non-Europeans.