

Reactions of Poliomyelitis Patients to Autonomic Drugs.

JOHN A. TOOMEY. (Introduced by Victor C. Myers.)

From the Department of Pediatrics, Western Reserve University, and the Division of Contagious Diseases, City Hospital, Cleveland, Ohio.

In infantile paralysis, the superficial abdominal reflex is lost or modified in whole or in part, often before somatic paralysis appears. Theoretically then this loss could not be due to a spinal nerve involvement but might be due to sympathetic nerve paralysis. Since we have believed that the disease is essentially of gastrointestinal origin, the possible connection between the sympathetic system and the gut was given consideration. Experiments with autonomic drugs were performed to show this connection.

In typical cases of the spinal type of the disease, the patients were injected in the paralyzed and non-paralyzed areas with atropine, histamine, adrenalin, etc., without definite results. Salt solution was injected intradermally over the paralyzed areas, but the comparative data were useless.

When pilocarpine was injected subcutaneously, remote from the part paralyzed, the patients began to sweat first over the paralyzed area and only later over the corresponding normal side. A few minutes later the unparalyzed side stopped sweating, but the paralyzed side usually continued to be moist.

Since the sweat glands are solely innervated by the thoracolumbar outflow, their stimulation was then attempted by adrenalin. When adrenalin was given such a patient at the height of the sweating response to pilocarpine injections, the sweating ceased promptly over the unaffected area, but the patient continued to sweat over the paralyzed side, showing that the thoracolumbar sympathetic outflow of that particular segment was paralyzed. Since this reaction occurred often before somatic paralysis, it directed attention to the sympathetic system as the first part of the nervous system to be involved in this disease.