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PSEUDO-BULBAR PALSY

By J. Hendrie Lloyd, M.D.

J. Hendrie Lloyd read a paper on pseudo-bulbar palsy, embodying the report of a case which had occurred in his wards in the Philadelphia Hospital. The patient was a young man under 30 years old, who after successive paralytic strokes, extending over a period of several years, and involving both sides, was left with complete paralysis of the lips, lower face, lower jaw, tongue and some of the muscles of phonation and deglutition. Speech was impossible, the patient having a complete anarthria, although he was not properly spastic. Ingestion of food was only possible by introducing the substances to be swallowed far back in the pharanx. The patient had the peculiar automatic laughter seen sometimes in pseudo-bulbar palsy. The autopsy revealed bilateral lesions in the lenticular nuclei, in such position as possibly to involve the motor fibers at and just behind the knee of the internal capsule. The patient had not been either hemiplegic or diplegic, although in some of his paralytic strokes the arms and legs had been temporarily affected.

Dr. Lloyd discussed the pathology of these cases, and pointed out that the lesions must be in such a position as to cut off the upper order of neurones, and they must also be bilateral. Most of the reported cases have shown lesions in the lenticular nuclei.

Dr. C. K. Mills said the case was interesting in connection with the study of the functions of the lenticular nucleus, a subject which is still in much obscurity. He was inclined to give assent to the theory of von Bechterew as to centers for forced movements in the thalamus, these being connected with the cortex through the lenticula and anterior limb of the internal capsule. In several reported cases among those which he and Dr. Spiller collected, and one or two studied by them, lesions of the lenticular nucleus were present with spasmodic or involuntary laughter or weeping. There were probably separate centers in the lenticula. The lenticular nucleus is probably subdivided in a manner similar to the cortex, in regions which have particular relation to the functions of motility. In one region of the lenticula, in other words, a destructive lesion will cause a form of the glosso-labio-laryngo-pharyngeal syndrome, while in other regions lesions will produce disorders of motility in the leg, arm or face. The paralysis is not of the same permanence as that from

lesions of the internal capsule. Dr. Mills was especially interested in one of the clinical phenomena reported by Dr. Lloyd in this case, the athetoid movements in the arm. In several cases reported a peculiar athetoid or choreoid movement has been present in isolated lesions of the lenticula. It would seem that the paralysis or paresis which is due to lesions of the lenticula disappears in part; it will be seen not to disappear altogether if the cases are sufficiently carefully studied. In other words, a residuum of paralysis will be found even late in such cases.

Dr. T. H. Weisenburg stated that in 1904 he wrote the first paper on pseudo-bulbar palsy published in this country. In this he reported three cases with necropsy and four without. Since then he has seen many such cases and he thought they were quite common. It was his opinion that a great many cases which were reported as pseudo-bulbar palsy were really cases of diplegia, and he thought that a differentiation could be made between them. So far as pseudo-bulbar palsy is concerned he thought that a differentiation could be made in those cases in which there were involuntary laughing and crying, and those in which this did not occur. In all the cases he had studied he found bilateral multiple areas of softening, this agreeing with the results of his former study.

Recently, in association with Dr. Ingham, Dr. Weisenburg has studied some of the unusual phenomena of pseudo-bulbar palsy, and was especially interested in the respiratory and bladder disturbances, and he came to the conclusion that there is really no such a thing as a respiratory center in the cortex or a center for the bladder functions. The results of this study will be further incorporated in a paper.

Dr. Spiller said that the case that Dr. Lloyd and Dr. Ludlum reported was a typical one of pseudo-bulbar palsy. The absence of secondary degeneration does not mean that the lesion has not destroyed a certain number of fibers of the internal capsule, as the destroyed fibers may be so few that their destruction does not cause proliferation of neuroglia, and by neurogliar proliferation we usually judge of secondary degeneration. He alluded to a recently reported case, by Long, of extensive lesion of the motor part of the brain with comparatively little secondary degeneration. The specimens Dr. Weisenburg reported in his paper were from the Laboratory of Neuropathology of the University of Pennsylvania. One case was extremely interesting and had been in Dr. Spiller's service repeatedly. The patient had been in great danger of choking to death in eating, and saliva dribbled from his mouth. Dr. Spiller called attention to the fact that lesions in pseudo-bulbar palsy are not always in both cerebral hemispheres, but that one or more may be in the pons. He has seen many examples of pontile softening, always unilateral from one occlusion. This is caused by occlusion of one of the blood vessels from the basilar artery, as these supply one or the other side of the pons, but apparently no one vessel supplies both sides.

Dr. D. J. McCarthy said that Dr. Lloyd's case was under his care, as well as Dr. Dercum's in the Blockley service. Paralysis of mastication and paralysis of lips were complete in this case. Most of the cases of pseudo-bulbar palsy exhibit partial loss of power, but in this case the tongue lay absolutely flat in the mouth, the mouth was wide open, and when the man wanted to swallow he had to push the food back in the mouth, in this respect absolutely differing from any other case Dr. McCarthy had ever seen.

Dr. Dercum said that Dr. Weisenburg's remarks as to the absence

of special centers in the cortex are very suggestive. The striated body is possibly to be considered as a submerged portion of the cortex. It is practically the only representative of the cerebrum in reptiles and birds. The pallium attains a very imperfect development in the latter so that fundamental functions—such primal acts as the taking and swallowing of food—probably have a representation in the striated body. Perhaps, too, the mechanism of laughter has a similar representation. Further the facts of anarthria suggest that the striated body has some function of coördination. We should remember in this connection also that the original case of athetosis of the elder Hammond revealed at the autopsy, made many years later by his son, lesions in the striated body.

Dr. Lloyd said that there were two groups of speculators on this subject. There are those who claim that the lenticular nucleus is nothing but a pathway for fibers to pass through, and that it is not in itself an independent center. Dejerine appears to hold that a case like this is due to interruption of fibers at or near the knee of the internal capsule.

Others claim that the lenticular nucleus is an independent coördinating center in itself. This seems to have been Marie's idea when he said that motor aphasia is merely an anarthria plus a sensory aphasia; but the trouble with that theory of Marie's is that in ordinary motor aphasia there is no true anarthria, as in Dr. Lloyd's case. His patient had a complete paralysis of the muscles of the lips, tongue, lower jaw, and even of some muscles of the larynx, a condition which is not seen in motor aphasia.

Dr. Lloyd said that he had not much confidence in the mere gross inspection of these lesions, because the damage and interference with function during life may be much more extensive than appears from a post mortem examination. The cortical centers for all the affected muscles in this case lie very close together, and their motor fibers probably pass down through the capsule close together also; therefore, it is not inconceivable that a limited lesion in the lenticula might just involve the comparatively small bundle of motor fibers in the internal capsule.

Dr. Lloyd was not prepared to offer any theory himself in explanation of the automatic laughter.

ADIPOSIS DOLOROSA—A CONSIDERATION OF ITS DIAGNOSIS AND PATHOLOGY, WITH REPORT OF AUTOPSIES

By G. E. Price, M.D.

A report of two typical cases of adiposis dolorosa from the service of Dr. Dercum at the Philadelphia Hospital, being the sixth and seventh to be recorded with autopsy. They were both females, aged 48 and 57 years, respectively, and presented nothing unusual in their clinical history.

The pathological findings in Case 1 were: Inflammatory changes in the thyroid with marked increase in the connective tissue of one lobe, the other showing compensatory hypertrophy; also inflammatory changes in the hypophysis together with a condition resembling adino-carcinoma. The ovaries were sclerosed, and there was present an interstitial and parenchymatous neuritis of the terminal filaments. In Case 2 the thyroid was somewhat enlarged, with increase of the connective tissue and dila-