ANGIOGRAPHIC FINDINGS IN WALLENBERG’S LATERAL MEDULLARY SYNDROME

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This report concerns 7 cases of Wallenberg’s lateral medullary syndrome studied by vertebral angiography. Krayenbühl¹ and Krayenbühl and Yaşargil⁵ in two reports mentioned that they have studied 12 cases but actually 5 cases were reported, 3 in their first publication and 2 in the second (several were not clinically lateral medullary syndromes). They found partial or complete occlusion of the vertebral artery at the arch of the atlas as the characteristic angiographic picture for this clinical syndrome. There are other scattered reports of angiographic studies done in cases of the lateral medullary syndrome usually as part of a large series of vertebral angiograms but, as far as we know, Krayenbühl and Yaşargil’s is the largest series reported previously.

An excellent demonstration of the pathologic findings in this syndrome has been given by Fisher et al.¹ Those authors found occlusion of the vertebral artery in 7 of 16 pathologically proven cases, occlusion of the vertebral and the posterior inferior cerebellar arteries in 5, occlusion of the posterior inferior cerebellar artery alone in 2 and in 2 cases no vascular occlusion was found. In those cases in which just occlusion of the vertebral artery was present, small branches of that artery had supplied the infarcted lateral medullary area and the posterior inferior cerebellar artery was absent or not involved in the thrombosis. None of their cases was studied angiographically prior to death. Speculations about some of the symptoms associated with the syndrome have been made by Currier et al.²

In a 7-year period (1954–1961) 7 patients with the lateral medullary syndrome were studied angiographically at the University Hospital and the Ann Arbor Veterans Administration Hospital. This does not represent every patient with the syndrome seen during that period of time but does include all on whom angiographic studies were done.

CASE REPORTS

Case 1. U.H. #973199. C.D., a 47-year-old highway worker, was admitted Jan. 19, 1961. He had noted the onset of burning and coldness in the right cheek 7 months previously. This was followed by nausea, vomiting and a tendency to fall to the right. Several days later, while in another hospital, he noticed that the left side of his trunk and his left leg were numb. There was minimal difficulty in swallowing. Subsequently the nausea, vomiting and dysphagia cleared. His imbalance also improved but a sensation of burning and numbness in the right side of the face and in the left side of the body was noted. He was unable to chop wood because of poor balance. The patient had been moderately obese and was hypertensive.

Examination. Neurological abnormalities were as follows: The right palpebral fissure was 2 mm. narrower than the left and the right pupil was 1 mm. smaller than the left. The right corneal reflex was absent and sensations of pinprick and temperature were lost entirely on the right side of the face. There was definite droop of the palate on the right, and, on phonation, the palate tended to pull to the left.

There was minimal weakness of the right arm and hand. Cerebellar testing showed minimal ataxia on heel-to-knee-to-toe and finger-to-nose
tests and slowness of rapid alternating movement on the right side only.

There was complete loss of perception of pin-prick and temperature on the entire left half of the trunk and extremities up to a level about 2 to 3 in. above the left nipple. Vibratory perception was decreased minimally and equally in both legs.

Course. The patient's findings were interpreted as being those of typical right lateral medullary syndrome with moderately good recovery. Fig. 1 demonstrates the angiographic findings.

Case 2. U.H. #985013. W.A., a 55-year-old male, was admitted June 15, 1961. He had experienced nausea, vomiting and dizziness several days before, and 1 day before admission numbness in the right side of his face, pain in the right forehead and behind the right ear, and a tendency to fall to the right. Hiccups began the day of admission.

Examination. There was minimal horizontal nystagmus on left lateral gaze only. There was no definite ptosis but the right pupil was 1 mm. smaller than the left and sweating was decreased on the right side of the face. The right corneal reflex was absent and sensations of pain and temperature were lost entirely in the distribution of the right trigeminal nerve. Sensation of light touch was decreased over the same area. There was minimal decrease of perception of taste on the right side of the tongue. There was a droop of the soft palate, with an absent gag reflex and a paralyzed vocal cord on the right.

There was slight ataxia of the right arm and leg. He tended to fall to the right.

There was complete loss of sensations of pin-prick and temperature on the entire left half of the body and extremities which extended exactly to the midline and to the distribution of the left trigeminal nerve.

Course. Twelve days after the onset he was feeling much better with no nausea, vomiting, pain, hiccup, hoarseness or vertigo. His gait was normal. On re-examination his sensory deficit and his palatal and vocal-cord dysfunction had improved.

He was thought to have had a typical lateral medullary syndrome with good recovery. Figs. 2 and 3 demonstrate the angiographic findings.

Comment. In Cases 1 and 2, both patients demonstrated clinically a typical right lateral medullary syndrome. Angiographically an occlusion of the right vertebral artery was demonstrated at the point of origin from the right subclavian artery. Since no attempt was made to study the vertebral artery by direct puncture higher up, two questions arise in connection with this finding. The first, whether or not this occlusion was responsible for the lateral medullary infarct. Fisher et al. stated that in 11 of their 16 patients in whom the entire vertebral artery was investigated there was none with a block at the origin of the vertebral artery who did not have a lesion higher up in the vertebral artery. It is possible, therefore, that in our Cases 1 and 2 lesions higher up might exist. The second is whether the angiographic findings in Cases 1 and 2 represent a congenital absence of the vertebral artery. Although we cannot say definitely that they do not, in view of the rarity of such an anomaly we feel it highly unlikely. The coincidence of a syndrome known to result from thrombosis of the vertebral artery and the presence of failure of angiographic filling of the vertebral artery on the same side would seem to be strong circumstantial evidence that the artery has indeed been occluded.

Case 3. U.H. #574527. L.S., a female aged 42, was admitted May 31, 1960. About 1 week previously she awoke with a pain in the left posterior region of the neck. This continued for 8 or 4 days.