Congenital Arteriovenous Aneurysm in the Neck

A Case Report

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Congenital arteriovenous aneurysm in the neck has rarely been described. A review of the available literature shows that only two cases have been reported up to the present. The diagnosis in these two cases was confirmed by surgery. The anastomosis of the arterial and venous channels was produced by abnormal blood vessels, connecting, in one case, the external jugular vein with the external carotid artery and in the other, the internal carotid artery with the external jugular vein. Both cases survived radical surgical intervention.

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The following case is presented for its interesting clinical and angiographic features.

Case Report

History. A 53-year-old woman had lived in Athens, without symptoms until the autumn of 1961 when she noticed a swelling the size of a walnut on the upper part of the left side of her neck. The swelling gradually became more prominent and she noticed that at times it became much larger, especially after fatigue or emotional tension.

Nine months later, on July 15, 1962, she experienced a sudden attack of dizziness, accompanied by a ringing noise in the left ear. She did not lose consciousness, however, or fall down. Two weeks later and throughout the month of August she had several attacks similar to the first one. These attacks became more frequent and by the beginning of December, 1962, she described

Fig. 1. Preoperative arterial phase: Normal filling of the common carotid artery with prompt filling of an elongated mass of vessels, extending from the bifurcation of the common carotid artery to the condyloid process of the left jaw. The internal carotid artery is well filled and pushed forward by the mass. The carotid syphon is shown but of the cerebral arteries only the middle is slightly filled. The external carotid artery is also filled but no branches are shown, except the lingual artery.

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severe continuing dizziness and tinnitus with a slight headache, and pain in the left ear.

In this condition the patient was admitted to the Neurosurgical Service of the Therapeutic and Diagnostic Centre of Athens, on February 24, 1968.

Examination. Physical examination was negative apart from the lesion in the neck. On the left side of the neck, just below the lobe of the ear and behind the angle of the jaw, there was a slightly pulsating mass which measured $8 \times 5$ cm. in transverse and vertical diameters. The superficial veins on either side of the neck were not dilated and the colour of the skin over the mass was normal. The mass was soft and compressible, circumscribed and not attached to the surrounding tissues. It pulsated in time with the heart beat, most markedly at a point $2$ cm. behind the angle of the jaw. It was extremely difficult to determine whether this pulsation was of the mass itself or transmitted from the carotid arteries. An attempt was made to rule outally transmitted pulsation, by pushing inward the common carotid artery and its branches, but this failed, as strong pressure stopped the pulsation of the mass. When a finger was placed over the point of most marked pulsation, an obscure thrill, confined to a very small area, could be felt. When pressure was put over the external jugular vein at the base of the neck, the mass remained unchanged in size. On auscultation, a slight but continuous bruit, definitely accentuated at the time of systole, could be heard over the mass.

The red blood cell count was 4.3 million per c. mm.; hemoglobin was 83 per cent; the white blood cell count was 7,200 per c. mm.; blood chemistries were found to be within normal limits; sedimentation rate was 64 mm. in the 1st hr., and 106 mm. in the 2nd hr.; Wassermann reaction was negative; urinalysis showed hyaline casts and 1–3 white blood cells per high power field; an electrocardiogram showed no abnormalities. Repeated punctures of the mass, by passing a very fine needle through the oral cavity at different points where it protruded into the pharyngeal fossa, always demonstrated arterial blood. Roentgenograms of the skull, jaw, cervical spine and chest showed no pathological changes. Results of angiography of the left common carotid artery were as shown in Figs. 1, 2 and 3.

The simultaneous presence of opaque medium in the carotid system and the mass, on the one hand, and the internal jugular vein, on the other, indicated that the mass in the neck was a congenital angiomatous arteriovenous aneurysm, feeding from the external carotid artery and short-circuiting into the internal jugular vein.

Operation. In view of these findings, the patient was advised to undergo surgery as the lesion in the neck was potentially dangerous. She was admitted on March 12, 1968. It was planned not to extirpate the arteriovenous lesion but to stop its blood supply by ligation of the external carotid artery. Thus, a skin incision was made across the inner border of the sternocleido mastoid muscle, extending upwards to $2$ cm. below the lobe of the ear and downwards to the middle of the neck. The skin flaps were turned back, the external jugular vein was verified but not ligated. It was normal in size. By dissecting across the inner border of the sternocleidomastoid muscle, the common carotid