THROMBOSIS OF THE INTERNAL CAROTID ARTERY
CAUSED BY A CERVICAL RIB

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The neurological symptoms caused by thrombosis of the internal carotid artery have been fully discussed in many articles during the last few years.\(^1,3\) However, in the literature at my disposal I do not find any reference to thrombosis of the internal carotid artery caused by the presence of a cervical rib on the same side. So I venture to report the following case which came under my care recently.

CASE REPORT

A.S., a female aged 23 years, began to have intermittent attacks of pain in the right arm together with numbness of all the fingertips of the right hand. Subsequently the arm became cold and clammy, and wasting became gradually apparent. Five months after the onset of symptoms the patient was suddenly taken ill. She lost consciousness and displayed convulsions on the left side. The seizure lasted almost an hour and the patient was left with a left-sided hemiplegia, which gradually improved during the following months.

Examination 3 months after the attack disclosed a woman in good general health. The pulse rate was 76/min. on the left but could not be felt on the right side. B.P. was 130/70. The optic fundi and visual fields were normal. In the right supraclavicular groove an abnormal rib could be felt as a bony prominence.

The muscles of the right arm, especially the thenar and hypothenar, were atrophied and all tendon reflexes were absent. The right hand was cold and the radial pulse could not be felt. Sensations to pinprick and temperature variations were diminished up to region of the elbow. On the left side a spastic hemiparesis was present with partial contracture of the fingers. Tendon reflexes were all exaggerated. Hofmann’s reflex was positive, but plantar reflexes were flexor.

Roentgenograms verified the diagnosis of a cervical rib (Fig. 1).

Carotid angiography was performed on the right side by the open method; 12 cc. of 35 per cent Nosydrast were injected into the common carotid artery while the needle was kept in the direction of the internal carotid artery. On the lateral view (Fig. 2) all the branches and ramifications of the external carotid were filled but the internal carotid became gradually thinner and disappeared at a distance of about 4 cm. above the bifurcation.

Operation. Under general anaesthesia the cervical rib was exposed through an anterior incision. The subclavian artery was found to be thrombosed. The rib was removed in pieces and the brachial plexus was relieved from pressure. The stellate ganglion was surrounded by adhesions to such a degree that it could not be clearly identified.
Postoperative course was uneventful. About 16 days after the operation the right hand started to feel warmer and gradually returned to normal colour.

COMMENT

Various etiological factors in nontraumatic thrombosis of the internal carotid artery have been discussed: arteriosclerosis,\textsuperscript{2,3} thromboangiitis obliterans,\textsuperscript{4} acute infections,\textsuperscript{3} syphilis,\textsuperscript{4} and pathological conditions of neighbouring tissue.\textsuperscript{4} Less attention has been paid to the part that the sympathetic nervous system plays in the etiology of this disease. Only Fisher\textsuperscript{2} referred to this question. He wrote: "The rôle of sympathetic impulses, normal or abnormal, in producing vasoconstriction can only be surmised, but it is not unlikely that they play an important part." It is well known that a cervical rib sometimes leads to extensive adhesions in the so-called cervico-axillary groove. In the case reported here it is believed that continued irritation of the sympathetic ganglions, caused by adhesions, had led to chronic spasm of the carotid artery with its subsequent thrombosis.

REFERENCES