Case Reports and Technical Note

Extracranial Carotid Aneurysm

Report of Four Cases*

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During the past several years, sporadic cases and even a few series of cervical carotid aneu-
rysms have been reported. The rarity of this con-
dition is indicated by the fact that Beall and his
associates reported only 7 cervical aneurysms in
2,800 operations for extracranial arterial aneu-
rysms. At the University of Virginia Hospital
since 1960, 4 such patients have been treated.
These cases had a variety of causes and presented
different surgical problems; 2 directly involved
the central nervous system.

Case Reports

Case 1. H.S., a 23-year-old white man, was admitted 1
hour after he had received a .32 caliber shotgun wound
in the left side of the neck. He was conscious and vital
signs were normal. There was an entry wound 3 cm.
above the left clavicle. A massive hematoma filled the
anterior part of the neck, and there was no wound of
exit. The missile could be palpated at the free border of
the right trapezius muscle. Pulsations in the neck could
not be felt because of the hematoma. The chest was
normal. Neurological examination revealed only numb-
ness and weakness in the first 2 digits of the right hand.

Admission blood count and urinalysis were within
normal limits. Roentgenograms revealed extensive
subcutaneous emphysema and widening of the superior
mediastinum. Ophthalmodynamometry demonstrated
equal pressure in both retinal arteries.

Operation. Tracheostomy, bronchoscopy and esoph-
goscopy were performed. These procedures showed no
evidence of injury of the trachea or esophagus. The pa-

tient made an excellent recovery, the cervical hematoma
gradually receded, and he was discharged from the
hospital.

Postoperative Course. Four and one-half weeks later, a
6×6 cm. pulsatile, tender mass was noted in the right
supraclavicular area. A bruise was heard over this mass
but not a continuous murm. He now complained also
of hoarseness of 2 weeks duration. The tender, pulsatile
mass in the right supraclavicular region was found to
extend from the angle of the mandible to beneath the
level of the clavicle. The lateral margin was in the poste-
rior triangle of the neck; medially the trachea was
deviated to the left. Neurological examination revealed an
absent right triceps reflex and hypesthesia in the C-7
dermatome on the right. Indirect laryngoscopy demo-
strated paralysis of the right vocal cord.

Operation. The mass was explored through an incision
extending from the right mastoid process along the
border of the sternocleidomastoid muscle and into the
second interspace as a median sternotomy. The lesion
thus exposed was a dumb-bell shaped aneurysm mea-
suring 8×10 cm. in its greatest dimensions (Fig. 1). The
inferior border arose 4 cm. distal to the innominate
artery and its superior border ended 4 cm. proximal to
the carotid bifurcation. On the medial surface, the mass
was densely adherent to the right lobe of the thyroid and
the right recurrent laryngeal nerve. The anterior portion
of the mass was a false aneurysm. Beneath it was a
4×4 cm. true aneurysm arising from the common
carotid artery. The true aneurysmal portion of the mass
was excised, using an internal shunt in both ends of the
common carotid artery. The defect in the artery was re-
paired with a 5 cm. woven teflon prosthesis (Fig. 1).

The postoperative course was unremarkable and the pa-

tient was discharged on the eighth day. He has been
seen intermittently for 4 years during which time he has
returned to full employment. A recent examination re-
vealed a persistent right laryngeal paralysis; the
strength in the right upper extremity had returned to
normal.

Case 2. A 57-year-old white man was admitted with a
chief complaint of dizzy spells. The patient had first
noticed a pulsating lump in the left side of his neck 5
years before admission; there had been no recognized
trauma. Over the succeeding years, it had enlarged but
never was painful. One month before his present admis-
sion, the patient noted the first of several dizzy spells,
precipitated by exercise. Three weeks before admission,
he had experienced a syncopal attack followed by com-
plete recovery. He was then referred to the hospital
with a diagnosis of carotid aneurysm.

Examination. There was a non-tender, pulsating,
8×3 cm. mass at the angle of the left mandible on the
left; a loud systolic bruit was heard over this mass.

Neurological examination was normal. Aside from a
mild hypertension of 170/70, there was no other evi-
dence of vascular disease.

Bilateral carotid arteriographic studies revealed that
the aneurysm arose from the internal carotid artery
approximately 3 cm. distal to the bifurcation (Fig. 2).
Both anterior cerebral arteries were filled from the left
side, obviating the need for a Matas test. This arterio-
graphic study indicated that occlusion of the carotid
artery would not be tolerated.

Operation. The body temperature of the patient was
reduced to 36°C. and an incision made along the anterior
border of the left sternocleidomastoid muscle. The

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Case 1. Traumatic aneurysm of common carotid artery. A true aneurysmal sac can be seen in the base of the large false aneurysm. Completed repair with teflon prosthesis.

Case 2. F.B., an 18-year-old white man, was admitted to the hospital because of decreased hearing for about 3 months, followed several weeks later by ptosis on the left and occasional attacks of diplopia. These symptoms had been progressive. Roentgenograms of the skull obtained previously showed an erosion of the petrous tip and a mass protruding into the base of the skull (Fig. 4). He was admitted to the hospital with a diagnosis of carcinoma arising in the sphenoid sinus.

Examination. Physical examination was normal. Neurological examination revealed paresis of the left lateral rectus muscle, left Horner’s syndrome and decreased hearing on the left. A precautionary carotid arteriographic study was made before attempting biopsy (Fig. 5). Injection of the left carotid revealed a large aneurysm at the base of the skull. The roentgenograms included a Matas test which showed an adequate circle of Willis and good cross-filling.