RUPTURE OF AN INTRACRANIAL ANEURYSM 
DURING CAROTID ARTERIOGRAPHY 

A CASE REPORT* 

JAMES R. JACKSON, M.D., GEORGE T. TINDALL, M.D., AND 
BLAINE S. NASHOLD, JR., M.D. 

Department of Surgery, Division of Neurosurgery, Duke Medical Center, and Durham 
Veterans Administration Hospital, Durham, North Carolina 

(Received for publication July 24, 1958) 

Rupture of an intracranial aneurysm coincident with the injection of contrast 
medium into the carotid artery is rare. The following report concerns such a com-
plication in which the extravasation of radiopaque medium about the aneurysm is 
shown on the arteriogram. 

CASE REPORT 

A 61-year-old negro male was admitted to the hospital on Jan. 28, 1958. One week pre-
viously, he noted the sudden onset of a sensation of pressure in the right occipital region 
which was followed by vomiting. He was confused for the next 36 hours. When his confusion 
cleared, he complained of a stiff neck, generalized weakness, pain in both legs, and was 
able to open the right eye. These symptoms persisted until admission to the hospital. 
He had been admitted to another hospital in 1944 with the complaints of occipital head-
ache, nausea, and vomiting. At that time examination revealed a blood pressure of 150/74, 
stiff neck, and increased tension of the right eye to palpation. Three lumbar punctures were 
done and each yielded grossly bloody cerebrospinal fluid. There was no mention of the 
presence of xanthochromia. He was treated with analgesics and sedation and discharged 
after 18 days of hospitalization. 
Examination on Jan. 28, 1958 showed an oriented but lethargic negro male. Blood pres-
sure was 130/80, pulse rate 78, and respiratory rate 20. Rectal temperature was 98°F. There 
was an incomplete paralysis of the right third cranial nerve. The pupillary reaction to light 
was preserved whereas the extraocular component was lost. There was marked nuchal 
rigidity, with right facial paresis of central type, and weakness of the left arm. 
Routine blood and urine studies revealed no abnormalities. Blood and cerebrospinal fluid 
serologic tests for syphilis were negative. Roentgenograms of the skull were normal. Lumbar 
puncture showed an opening pressure of 370 mm. of cerebrospinal fluid. It was grossly bloody 
and xanthochromic with a protein content of 50 mg. per cent. 
Bilateral percutaneous carotid arteriography, using local anesthesia, was attempted on 
the day following admission. The right common carotid artery was punctured without diffi-
culty. During palpation of the left common carotid artery prior to puncture, the patient lost 
consciousness. A single injection of 8 cc. of 50 per cent Hypaque was made into the right 
common carotid artery. There was no visible filling of the right internal carotid system with 
contrast medium. The blood pressure, 5 minutes later, was 70/50 mm. of Hg. He was treated 
with 120 mg. of Levophed given intravenously in 300 cc. of 5 per cent dextrose for the next 
1½ hours. His level of consciousness quickly improved and, 1 hour after manipulation of the 
left common carotid artery, his mental status was comparable to that prior to the attempted 
arteriogram and his blood pressure was 130 mm. Hg. 
His general physical condition continued to improve, and, 2 days later, a second at-
tempt at carotid arteriography using local anesthesia was made. His level of consciousness 

* Supported by grant No. 3B 9038 from the National Institutes of Health.
was unaltered when the needle was inserted into the right common carotid artery. However, he lost consciousness when the left common carotid artery was punctured. The blood pressure and pulse did not change. Bilateral carotid arteriograms were obtained using 5 cc. of 50 per cent Hypaque for each injection. The first injection on the right showed an aneurysm on the internal carotid artery (Fig. 1). A second injection on the right, made 10 minutes later, showed an extravasation of contrast medium about this aneurysm (Fig. 2). The left arteriogram, made between the two right-sided injections, revealed an aneurysm on the internal carotid artery (Fig. 3).

It was decided to attempt an intracranial clipping of the ruptured aneurysm under hypothermia. Three hours after the rupture of the aneurysm, a right frontal craniotomy was

Fig. 1. Right carotid arteriogram showing aneurysm of right internal carotid artery.

Fig. 2. Right carotid arteriogram made 10 minutes following arteriogram shown in Fig. 1. The extravasation of contrast medium around the ruptured aneurysm is seen.