latter two groups all but one case have clinical remission in certain days.

In the first group acute ischemic changes with massive subarachnoid hemorrhages were seen in all sections taken from many areas of brains. In the second, subarachnoid hemorrhages were rebled extensively and ischemic lesions were also seen with microscopic foci of old infarction.

IN the third, subarachnoid hemorrhages confined to basal cisterns were present in three cases out of four. In these cases microscopical ischemic lesions were seen in the distributions of the ruptured vessels. IN addition to these old foci angioneurosis and fresh bleedings were seen in the regions of perforating arteries which were embedded in almost organized old blood clot.

f-3. Fatal Rupture of Diffuse Cerebral Telangiectasia in a Woman associated with a Spontaneous Carotid Cavernous Fistula during Cerebral Angiography

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The pathogenesis of complications of angiography performed as preoperative management for a carotid cavernous fistula has not frequently been reported, which complications were emphasized to have been as severe as were those of surgery in Hamby's series. The present authors' intention is to report a case of a spontaneous carotid cavernous fistula that showed diffuse cerebral telangiectasia on the first attempt of cerebral angiography which developed a massive haemorrhage during the second attempt.

CASE REPORT: On January 21, 1968, this 28-year-old woman developed sudden left hemicrania, vomiting, and tinnitus, followed by a left pulsating exophthalmos and a bruit over the head. On admission neurological examination revealed a left cavernous carotid fistula. The first attempt of left carotid angiography was performed on March 12, 1968. The first film of each projection was taken during the injection of Urografin. The arteriogram disclosed a left carotid cavernous communication through the aneurysm of the left internal carotid artery. In the lateral arteriogram, the cavernous sinus, superior-, inferior ophthalmic angular-, and anterior facial veins were filled immediately via the fistula; there was only a little filling of the middle cerebral artery. On the contrary, the middle cerebral vein, the frontal ascending vein, veins of Trolard, of Rosenthal, of Labbe, transverse sinus, and the internal jugular vein were observed in the first film taken.

during the contrast injection. In the fronto-temporal area, diffuse cerebral telangiectasia were seen. At one week after the first attempt of angiography, serial angiography was carried out to make a circulatory state clear. No sooner had the x-rays been taken than the patient fell into coma. In spite of an intensive treatment, the patient expired 48 hours after the rupture.

Autopsy displayed marked edema on both hemispheres, and a large hematoma in the left fronto-temporal lobe. An intracavernous aneurysm was found to be situated at the dorsolateral aspect of the left internal carotid artery. Microscopic examination showed that the left internal carotid artery, at the level of immediately proximal to the aneurysm, was characterized by partial separation of the media being edematous, intimal thickening in part, proliferation of much waved internal elastica. At A-1 of the left anterior cerebral artery, the intima was partly thick and fibrotic; the internal elastica was much waved and duplicated; the media and adventitia markedly edematous and fibrotic. In the left Sylvian fissure, the internal elastica of the middle cerebral artery was separated; the intima, media, and adventitia were in the same changes as A-1 of the anterior cerebral artery. Pial vessels were found to be increased in the number and dilated, with the media and adventitia thinner. Capillaries were also seen dilated. Extravasation, by and large, was found in pial arterioles, penetrating arteries, and capillaries; not observed in the venous system.

Discussion to f-3.

The Case of Carotid Cavernous Fistula repeated several fetal Subarachnoid Bleeding due to the Rupture of Three Intracranial Aneurysms

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A case who had three intracranial aneurysms with carotid cavernous fistula and had died after several subarachnoid bleeding due to rupture of aneurysms is reported.

The patient, a man of 32, had injured his head, had been a continuous roar on the left side of his head 2 months later after head injury. He had noted marked protusion of his left eye 3 months later, under diagnosis of a carotid cavernous fistula, the first operation (ligation of left common carotid artery) was done in 1952 and second operation (ligation of left internal and external artery) was done in 1965. In 1968, he died after several subarachnoid bleeding.

Three aneurysms were discovered by autopsy—one at the bifurcation of left anterior cerebral artery and left middle cerebral artery, the other in the left