ANGIOGRAPHY IN THE MANAGEMENT OF INTRA- 
AND SUPRA-SELLAR TUMOURS*

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The development of cerebral angiography, and its ready availability in any modern neurosurgical centre, has led to its wide application to clinical problems.

Since the beginning of 1952, carotid angiography has been used extensively in the pre-operative evaluation of suspected intra- and supra-sellar tumours (including those tumours arising from the olfactory groove and in the third ventricle), and sometimes postoperatively as well. This procedure has been found very helpful in a recent series of 21 cases, and it is considered to be worthy of presentation.

PROCEDURE OF ANGIOGRAPHY

When an assessment of the neurological status has suggested, or established, the presence of a tumour in the region of the sella turcica, bilateral carotid angiography is carried out to secure the fullest possible information about the situation and size of the lesion and to enable the safest and easiest surgical approach to be made, if operation is necessary.

In order to reduce the risk of arterial spasm, 130 mg. of papaverine are given intramuscularly, just prior to the procedure, which is carried out either under local anaesthesia, or under a basal dose of avertin if the patient is not fully co-operative. Each common carotid artery is cannulated percutaneously in turn, and anteroposterior and lateral series of angiograms are taken, on each side, after injections of 10 cc. of 35 per cent diodrast.

At this stage, sufficient information is usually available to enable a definite diagnosis to be made and a suitable operative approach to be planned. However, should satisfactory filling of the anterior cerebral arteries not be seen, then pneumoencephalography is carried out, unless there is evidence of internal hydrocephalus (as indicated by “stretching” of the anterior cerebral arteries or by a raised intracranial pressure) when pneumoencephalography would be contra-indicated and ventriculography would have to be done, before proceeding to surgery. In either instance, special attention would be paid to “filling” skiagrams, and to brow-up anteroposterior and lateral skiagrams, showing the anterior portions of the lateral ventricles, the third ventricle and the basal cisternae, especially chiasmatis and interpseuduncularis.

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(a) *Displacement of Major Blood Vessels.* In cases of tumours arising from within the sella turcica, the intracranial portions of the internal carotid arteries appear to be elongated and the “siphon” is opened-out. The terminal

![Image](image-url)

**Fig. 1. Case 1.** Anteroposterior angiogram showing upward displacement of anterior cerebral artery and the obtuse angle it makes with the terminal part of the internal carotid artery.

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**Fig. 2. Case 9.** Showing marked “opening out” of the carotid siphon by a pituitary tumour growing posteriorly and laterally, causing homonymous hemianopia.