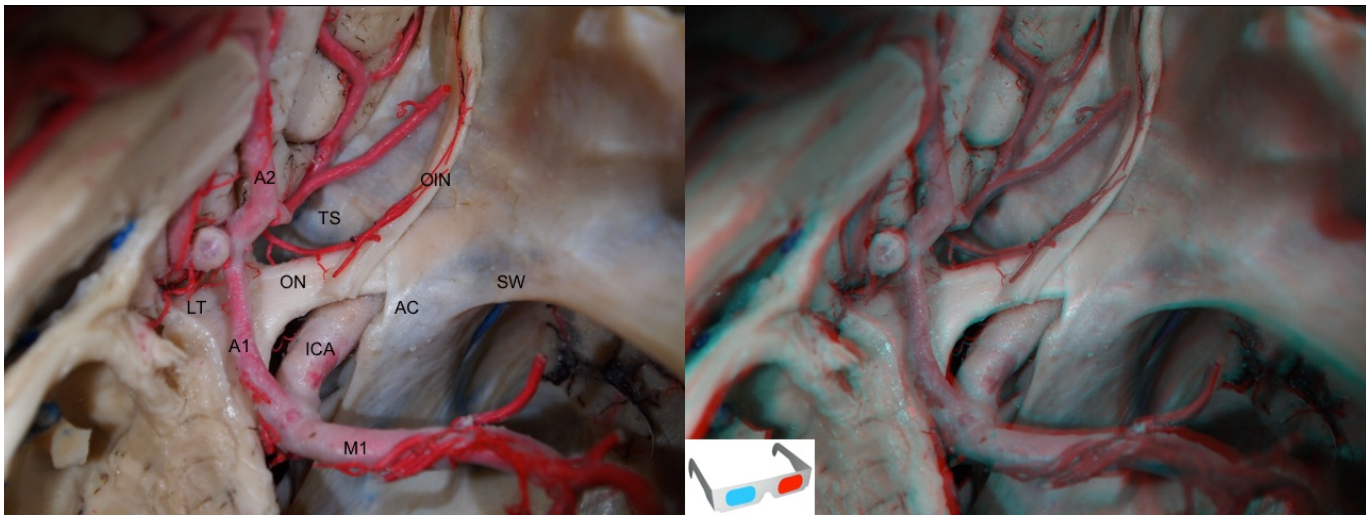
Olfactory nerve

The olfactory nerve (Latin: Nervus olfactorius), known as the first cranial nerve, or simply CN I, carries the sensory information for the sense of smell. Derived from the embryonic nasal placode, the olfactory nerve is capable of regeneration. The olfactory nerve is sensory in nature and originates on the olfactory mucosa in the anterosuperior nasal cavity.

From the olfactory mucosa, the nerve travels down the olfactory tract until it reaches the olfactory bulb, where the fascicles of the olfactory nerve pass through foramina on the cribriform plate, which resides on the roof of the nasal cavity. These fascicles are not visible on a cadaver brain because they are severed upon removal.

The sacrifice of the olfactory nerves is often required during a transbasal approach or subfrontal approach.



AC: anterior clinoid process; ICA: internal carotid artery; LT: lamina terminalis; ON: optic nerve; OlN; olfactory nerve; SW: sphenoid wing; TS: tuberculum sellae; A1: A1 segment of the Anterior Cerebral Artery; A2: A2 segment of the Anterior Cerebral Artery; M1: M1 segment of the Middle Cerebral Artery.

The pterional approach for anterior communicating artery aneurysm surgery, has the following advantage:

The subarachnoid space is widely opened and the brain hemorrhage can be removed as much as possible in the acute stages of SAH; damage of the olfactory nerve is minimized and bilateral parent arteries of the proximal side can be secured in an early stage of the procedure.