

NOTE ON AN UNUSUAL OPHTHALMIC ARTERY ASSOCIATED
WITH OTHER ABNORMALITIES

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AN abnormal artery arising from the middle meningeal is of sufficiently rare occurrence to warrant a short note; still more so when associated with multiple abnormalities found elsewhere. The few previous cases were summed up by Meyer as long ago as 1886 (*vide* Quain, 1892).

THE OPHTHALMIC ARTERY

In a female Singhalese body, aged 22 (No. 275 in the register of this department), the ophthalmic artery on the left side arose from the anterior division of the middle meningeal. It gave off a lacrimal branch before entering the orbit through the extreme outer end of the sphenoidal fissure. Within the orbit it passed deep to the ophthalmic vein and superior rectus muscle, to which it gave a branch, and then crossed, superior to the optic nerve, to the inner wall of the orbit. It then proceeded forwards between the internal rectus and superior oblique muscles giving off the anterior and posterior ethmoidal arteries. It finally terminated by dividing into the frontal and nasal arteries.

The nasal branch, after emerging from the internal tarsal ligament, took the place of the supra-orbital and anastomosed with the frontal and a branch from the superficial temporal. The supra-orbital artery itself was wanting.

The central artery of the retina and the ciliary arteries were given off from the internal carotid.

ARTERIES RELATED TO THE TEMPORAL BONE

In addition to the abnormal ophthalmic the middle meningeal gave off its normal petrosal branch directly opposite to the abnormal vessel. This took the normal course backwards into the aqueduct of Fallopius wherein it was found to anastomose with a vessel which proved on dissection to be the stylo-mastoid branch of the posterior auricular artery from the external carotid. No artery passed through the hollow of the stapes.

OTHER ARTERIAL ABNORMALITIES

(a) The right subclavian artery arose from the descending aorta and passed obliquely upward behind the oesophagus. This is pattern E of De Garis, Black and Riemenschneider (1933). The order of branches from the aortic arch was therefore right common carotid, left common carotid, left subclavian. The right vertebral was a branch of the right common carotid.

(b) The superior profunda artery on the left arm was a branch of the posterior circumflex artery.

ABNORMALITIES IN OTHER SYSTEMS

(a) There was a small middle lobe of the left lung.

(b) The kidneys showed signs of persistent foetal lobulation.

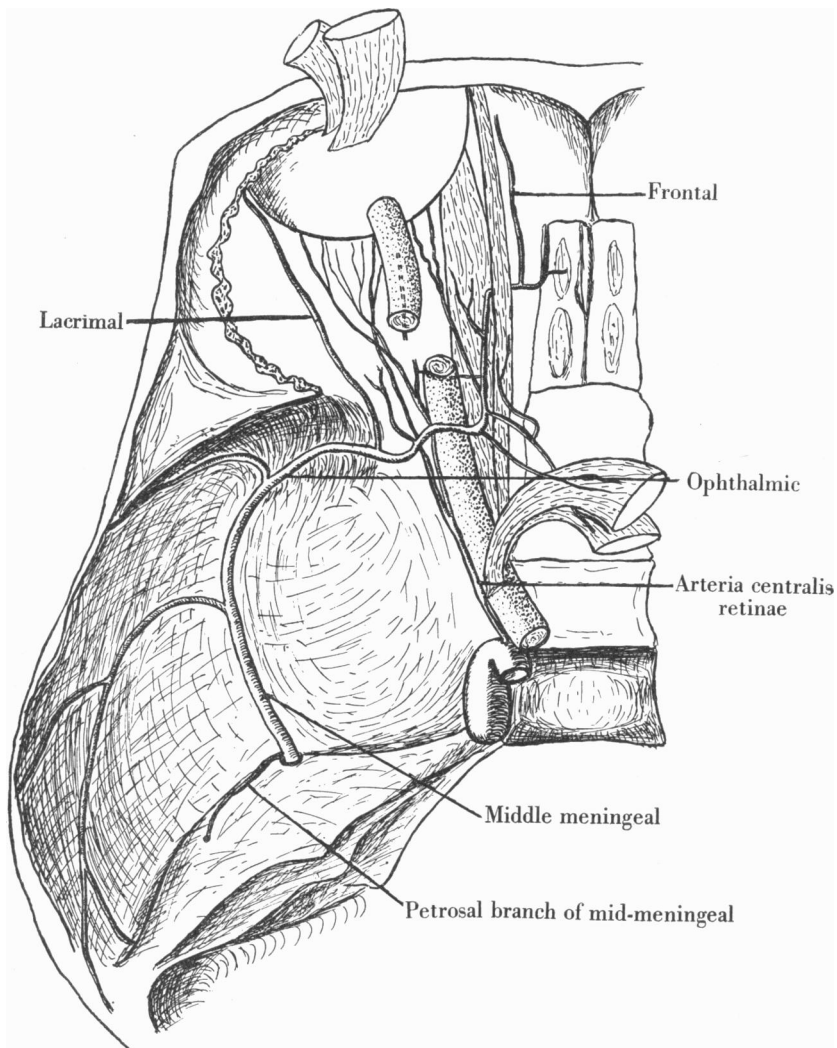


Fig..1. Middle meningeal artery giving origin to ophthalmic.

DISCUSSION

An abnormal ophthalmic artery from the middle meningeal is best explained as a persistence of the embryonic condition.

The primitive arrangement of the arteries in the region concerned here is susceptible of three interpretations: (i) the usually accepted view of the human embryologists, (ii) the state of affairs in the adult Madagascar lemurs, (iii) that seen in the lorisooids.

The current teaching concerning the arrangement of the vessels of this region in the human embryo is that given by Gray (1930), based on the researches of Tandler, viz. (i) a stapedial artery, arising from the anterior prolongation of the dorsal aorta near its junction with the 2nd branchial arterial arcade passes through the

hollow of the stapes. It breaks up into three divisions, viz. supra-orbital, infra-orbital and mandibular. The common stem of the infra-orbital and mandibular branches passes between the two roots of the auriculo-temporal nerve and becomes the middle meningeal; the original supra-orbital branch of the stapedia artery is represented by the orbital twigs of the middle meningeal (Gray, 1930, based on Tandler's researches). (ii) In the Madagascar lemuroids the internal carotid vessel terminates at the base of the skull by dividing into two terminal twigs, the stapedia artery and the arteria promontorii. The former is large and runs through the stapes to the roof of the tympanic cavity; the arteria promontorii is small (Le Gros Clark, 1934 and W. C. O. Hill, 1936). (iii) In the lorisoid the stapedia is small, as in man, whilst the arteria promontorii is large and becomes the internal carotid (Hill, 1936).¹

Taking the above into consideration the course of the stapedia artery in the present case could be tentatively put forward as a combination of (i) and (iii), viz. the stylo-mastoid branch of the posterior auricular, the petrosal branch of the middle meningeal, the anterior branch of the middle meningeal, the ophthalmic and supra-orbital.

CONCLUSION

1. An instance of an abnormal artery arising from the middle meningeal is described.
2. Other vascular anomalies and some primitive characters in other systems are described in the same subject.
3. The various abnormalities discovered are tentatively explained as due to persistent embryonic and foetal conditions.

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¹ Prof. Hill informs me that in the adult of *Loris* there is no stapedia artery. The internal carotid courses along the medial wall of the tympanic bulla and enters the cranium through the foramen lacerum medium.