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## **ANATOMY OF THE SUPERFICIAL TEMPORAL ARTERY AND CLINICAL IMPORTANCE**

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### Abstract

*The superficial temporal artery is one of the terminal branches of the external carotid artery. It begins in the parotid gland behind the collum mandible and crosses the posterior root of the zygomatic process of the temporal bone goes up. Auriculotemporalis nerve accompanies to the artery. Dividing into two branches, frontal and parietal. The known side branch artery parotideus, artery transverse faciei, auriculares anteriores, artery zygomaticoorbitalis and artery temporalis media. The superficial temporal artery is extremely important clinically. Pulse can be easily found because superficial temporal artery is under the skin. Pulse portion is received on the tragus of the arcus zygomaticus level. However, body heat can measure from this superficial temporal artery with non-invasive ways. By the superficial temporal artery and its branches anastomosis with different arteries and provide face and scalp nutrition. Aesthetic and reconstructive surgery of face and scalp and the temporoparietal, parieto-occipital surgery used as flap. It is used as grafts in intracranial and intracranial anastomoses. The superficial temporal artery and branches of knowledge of anatomical variations is very important for a successful surgery and appropriate flap procedures and more information is needed in this area.*

Keywords: *Superficial Temporal Artery, Clinical, Importance*

### **1. Introduction**

Superficial Temporal Artery (STA): the end branch extending as a continuation of external carotid artery. It starts in the parotid gland and in the direction of the mandibular column, extends from the posterior of the zygomatic process and branches frontal and parietal 5 cm above. In addition, parotid branch, transverse facial artery, anterior auricular artery, zygomaticoorbital artery and medial temporal artery are side branches. There are many other

unnamed small branches from these branches. These branches go to the jaw joint and masseter muscle (Marano at all,1985, Abul-Hassan at all. 1986, Chen at all, 1999).

Frontal branch: is the tip branch of STA in the direction of the tragus (Figure 1). It extends by curling in the forehead region and feeds the structures in this region. It anastomoses with the branches of frontal artery and supra orbital artery. (Arıncı and Elhan 2006, Lee at all 2015).

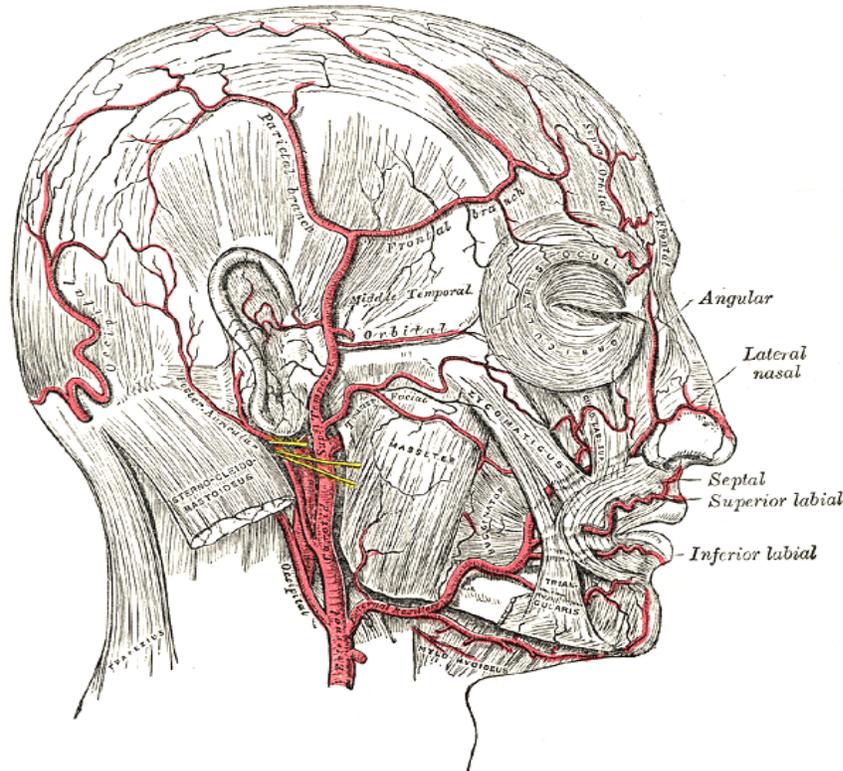
Parietal branch: is the thicker one of the tip branches (Figure 1).

Parotid branch: is a small branch that passes through parotid gland.

Transverse Facial artery: the branch before leaving parotid gland. It moves forward between the lower edge of the zygomatic arch and the parotid duct out of the gland and inside. The artery feeds the gland's channel, masseter muscle and the skin covering it. It makes anastomoses with near vessels.

Zygomaticoorbital artery: The branch of STA which is between the layers of temporal fascia. Along the upper edge of zygomatic arch, it extends towards the eye lids. It anastomoses with branches of ophthalmic artery by feeding the place and the skin (Figure 1).

Medial temporal artery: leaves from STA on the upper edge of zigomatic arch. It moves deeply and gives a branch to the fatty tissue between the deep temporal fascia. It forms a vascular area here. It feeds temporal muscle and anastomoses with the branches of maxillary artery. Profound temporal artery is the first branch of maxillary artery which feeds temporal muscle. The muscle branch of medial temporal artery also helps to feed the muscles. Profound temporal artery terminates on temporal line, by making a network with STA and medial temporal artery (Pinar and Govsa, 2006).



**Figure 1. STA and Branches** ([http://www.wikiwand.com/la/Arteria\\_temporalis\\_superficialis](http://www.wikiwand.com/la/Arteria_temporalis_superficialis) 14.12.2016).

Temporal parietal and parietal occipital region are fed by STA. These are very important regions. STA and branches are especially preferred as vascular grafts in the treatment of many injuries in present-day reconstructive surgery. STA; It is especially preferred in scalp flaps, eyebrows, mustache and beard repair. It is also used to close defects of auricular, orbital and nasal region of fascia flaps. It is also used in extra cranial and intracranial vascular anastomoses (Barutçu,1994, Bolitho and Hudson, 1996).

The variations of STA are very important which used in vein flaps, vascular anastomoses and reconstructive surgery.

Pınar and Govsa determined that 24 STA were divided in to the end branch in the direction of zygomatic arch in 74.07% cadavers and the end branch above zygomatic arch in 22.22% cadavers in their study on 14 adult cadavers.

Marano et al determined that STA were divided in to the end branch at 60% cadavers in the direction of zygomatic arch, 4% above zygomatic arch and 4% below zygomatic arch (Marano at all,1985).

When we look clinically, pseudo aneurysm of STA is a rare lesion that frequently develops due to trauma. The most common complaints in these patients are pulsing swelling, continuous,

pulsating and diffuse type headache. The treatment is surgical removal of the part of pseudo aneurysm of superficial temporal artery. In addition, selective catheterization and embolization can be performed (Erbaşan et al, 2010).

In addition, STA and branches are used in children to measure fever. Technological improvements are very easy and noninvasive to use together. Studies on this subject are going on. (Ekim and Ocakçı, 2013). It is also an important arterial because of its proximity to the surface.

## 2. Result

In conclusion, STA and branches once again increases the importance of clinically used in flaps, vascular anastomoses, reconstructive surgery, other surgical interventions in the region and in children. It is clinically important to know the anatomy of STA and its branches.

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