

**Discussion****The Trapezius Muscle Flap: A Viable Alternative for Posterior Scalp and Neck Reconstruction**

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The trapezius muscle is one of the largest muscles in the body. It is one of the most superficial muscles in the posterior aspect of the neck and thorax. The trapezius flap had been used frequently, but has been used less often in recent years. Still, a trapezius flap can be used in a number of ways in the reconstruction of the upper back or head and neck.

The authors noted that the flap could be useful for cases of frail, older patients, who are not in condition to handle long operations or patients whose recipient vessels are not easily found due to the presence of radiation therapy history. However, being versatile, this flap can be a good alternative to a free flap in general situation. The median age of the cases that they had seen is 62.2 years, not too old for a free flap. Moreover, three patients did not have a radiation history.

One of the reasons why the trapezius flap is not frequently used, according to the authors, is the surgeons' lack of familiarity with its surgical anatomy. In fact, due to the irregularity of its vascular structure, even the nomenclature is confusing: There is controversy over the Mathes and Nahai classification, an often used method.

The trapezius muscle had been categorized as a type II muscle, which has one dominant pedicle and some minor pedicles. Nonetheless, later cadaver studies have reported that the muscle has two dominant pedicles: a superficial cervical artery (SCA, or superficial branch of the transverse cervical artery) and dorsal scapular artery (DSA, or deep branch of the transverse cervical artery). The minor pedicles include the occipital artery and intercostal perforators [1].

As the authors have pointed out, conventional anatomic studies have so far been limited to Caucasian cases [2]. In that sense, this cadaver study on 16 flaps of East Asians has important implications. The results of the cadaver study should be helpful in establishing the length of flap and pivot point in performing actual surgery.

However, we believe that the authors could have taken advantage of the rare opportunity of conducting a cadaver study to a greater extent. The limitation of the study includes the absence of the evaluation on the DSA, the major pedicle, as the authors also mentioned. The DSA is frequently used as a pedicle in real surgery. The authors also used it as a pedicle in three cases.

Moreover, more detailed dissection of the highly variable vascular pattern, originating from the subclavian artery and transverse cervical artery could have been resourceful. The authors concluded that there was no DSA directly originating from the subclavian artery.

According to the literature, arteries branch out of the archetypal subclavian artery in various patterns. The suprascapular artery interacts with the branches of the SCA and DSA [3]. Therefore, the anatomic study could have been more meaningful had the dissection been conducted more towards the proximal side and the relationship with other surrounding arteries had also been examined.

The trapezius flap has been being recently used as a perforator flap as well. Contrary to the prior reports that distinct perforators were not able to be found from the trapezius flap, recent studies have demonstrated the surface landmarks of the perforator [4]. Despite possible limitations of using preserved cadavers, the evaluation on skin perforators might have been also helpful.

The trapezius flap can be used in a versatile manner: It can not only be used as a musculocutaneous flap and muscle flap, but also as a perforator flap. As both the SCA and DSA can be used as a pedicle, the flap can be constructed of various parts [5]. Furthermore, the trapezius flap can be used as a pedicled flap and free flap [1,4]. It is our expectation that the authors would continue to present diverse usages of the trapezius flap, based on their extensive anatomical knowledge and clinical experience with the flap.

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