The Superficial Musculoaponeurotic System: Does It Really Exist as an Anatomical Entity?

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Background: The exact anatomical entity behind the term superficial musculoaponeurotic system (SMAS) remains poorly understood. The different interpretations of the term SMAS by anatomists, surgeons, and histologists have caused confusion. This article aims to provide clarity regarding this term and the relevant anatomy.
Methods: A literature review was conducted to uncover the variety of descriptions of the term SMAS. A feasibility study, followed by a conclusive series of standardized layered dissections complemented by histologic analysis and sheet plastination, was performed on 50 cadaver heads (16 embalmed and 34 fresh; mean age, 75 years).
Results: Most literature considers the SMAS as layer 3, that is, a musculoaponeurotic layer that separates the subcutaneous fat of the superficial fascia from the deep fat of the deep fascia. The authors' dissections, histologic analysis, and sheet plastination demonstrated that layer 3 is present only where there are flat mimetic muscles and platysma-auricular fascia over the posterior part of the parotid gland as the evolutionary remnant of the platysma, but not between the flat mimetic muscles. Here, the subcutaneous fat is in direct contact with the deep fat without the interposition of a musculoaponeurotic layer 3.
Conclusions: Because of the absence of a distinct and complete layer 3 connecting the flat mimetic muscles, the authors conclude that the SMAS as originally described does not exist as a specific anatomical entity. In retrospect, the surgically created compound layered flap composed of a variable thickness of subcutaneous fat, mimetic muscles (eg, platysma, orbicularis oculi), and a thin layer of deep fascia is what is known as the "SMAS." *(Plast. Reconstr. Surg.* 153: 1023, 2024.)

As Voltaire (1756) said, the Holy Roman Empire was neither holy nor Roman, nor an empire. Analogously, the superficial musculoaponeurotic system (SMAS) is neither aponeurotic nor an entire system.
—K. Hwang (2018)

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The term superficial musculoaponeurotic system (SMAS) was originally described by Mitz and Peyronie in 1976 as a distinct musculoaponeurotic layer between the superficial fat and the deep fat responsible for complex facial mimicry.[1] From thereon, this term has been inextricably linked to face-lift surgery: where the layer of dissection is described in reference to the SMAS, being either superficial to or deep to the SMAS. This supposed layer is used to safely lift sagged facial tissues. In the layered anatomy of the face, the SMAS is categorized as layer 3, situated between the subcutaneous fat (layer 2) and the areolar plane of the spaces (layer 4).[2]

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Subsequent anatomical descriptions of the SMAS have varied so much as to result in confusion, thereby hampering proper understanding of its exact anatomy and its place in face-lift surgery. Instead of the expected complete confluent SMAS layer in the entire face, some anatomical studies have even demonstrated the lack of a definite SMAS over the midcheek anterior to the parotid gland.[3,4] Furthermore, the SMAS has also been described as a different structure [ie, the collection of fibrous septa (retinacula cutis) that connects the mimetic muscles and periosteum to the dermis, with the implication that the SMAS would be layer 2 instead of layer 3].[5] This increasing confusion about the SMAS warrants a thorough reappraisal of this layer to minimize further misunderstanding. Therefore, this study was undertaken to elucidate the existence and extension of the SMAS.

As proponents of the deep plane for face-lift surgery and tutors of a biannual deep plane dissection course, lifting the SMAS layer is second nature to us. However, this research has demonstrated that the layer we have been lifting for the past 40 years is not exactly as we, or others for that matter, had previously thought. Our research explains precisely what is lifted, why there is so much confusion around this term, and why it is hard to teach the deep plane to starting surgeons [**See Video (online)**, which shows the surgical creation of the SMAS flap.].

MATERIALS AND METHODS

Ethical approval for the project was granted by the Human Ethics Advisory Groups of the University of Melbourne for the feasibility study and the Queensland University of Technology for the conclusive study (project nos. 14243 and LR 2021-4306-4761, respectively). First, a review of the articles retained by the search "(superficial musculoaponeurotic system[title] or SMAS [title] or superficial fascia[title]) AND (anatomy or morphology or histology)" in PubMed was completed in May of 2021 to study what proportion of authors used each definition of SMAS. This review was updated in January of 2022.

A feasibility study was performed on 21 cadavers, 15 embalmed and six fresh-frozen (male, $n = 10$; female, $n = 11$; mean age, 76 years; SD, 14 years), to learn how to most effectively study this area of complex anatomy. This involved layered dissections, face-lift dissections, and band-saw macrosectioning in various planes.

Based on this feasibility study, a definitive study was set up on 29 cadavers. A series of standardized dissections was performed with loupe magnification on 15 fresh (nonfrozen) cadavers and one embalmed cadaver (male, $n = 9$; female, $n = 7$; mean age, 78 years; SD, 13 years; body mass index, 26 kg/m^2; SD, 5 kg/m^2). The two sides of the same cadaver were dissected using a different technique to better record the fascial layers. To establish the surgical presentation of the SMAS layer, a surgical composite face-lift dissection was performed on the first side using the technique of the senior author (B.C.M.), as described previously.[6] On the contralateral side, the previously described methodologic sharp layered dissection technique was used to investigate the layered anatomy and, specifically, layer 3.[7] By dissecting at the superficial surface and subsequently the deep surface of the platysma upward, and the galea, frontalis, superficial temporal fascia (STF), and orbicularis oculi (OOc) downward to the midcheek and zygomaticus major (ZMa), the extent, continuity, and connections of this layer could be investigated. Finally, objective technical investigations were used to complement the dissection findings and provide evidence at a microscopic level:

1. Sheet plastination of the head and neck of 10 fresh cadavers were processed by von Hagens plastination in the axial, sagittal, and coronal planes using their latest technique (male, $n = 4$; female, $n = 6$; mean age, 67 years; SD, 8 years).[8]
2. Histologic analysis of full-thickness facial samples was performed on 10 cadavers to investigate the existence of an aponeurotic layer connecting these different structures (male, $n = 5$; female, $n = 5$; mean age, 81 years; SD, 6 years).[9] The aponeurotic connection of the platysma to four key structures was studied: (1) the STF, (2) the OOc, (3) the ZMa, and (4) the other lip levator muscles.

RESULTS

The systematic literature review uncovered a variety of contradicting descriptions of the term SMAS. The standardized set of gross anatomical dissections clearly demonstrated that no definite SMAS (layer 3) exists anterior to the platysma-auricular fascia, which was subsequently confirmed by sheet plastination and histologic analysis.

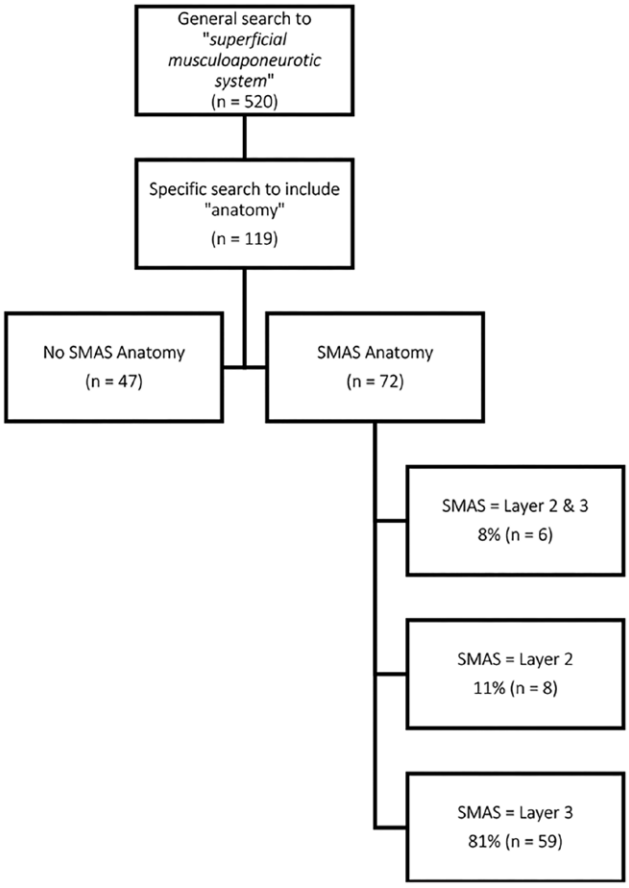

Fig. 1. Methodology and results of the literature review of the term SMAS.

Systematic Literature Review

The PubMed search returned a total of 124 articles, which is a representative cohort (24%) of the 520 articles published on the SMAS. Seventy-three articles discussed the anatomy and/or surgical application of the SMAS (Fig. 1). Three different interpretations of the SMAS were revealed to coexist in the literature:

- 81% ($n = 59$) considered the SMAS as layer 3 (ie, a musculoaponeurotic layer dividing the subcutaneous fat from the deep fat).
- 11% ($n = 8$) considered the SMAS as layer 2 (ie, the system of fibrous connections between the mimetic muscles/periosteum and the skin).
- 8% ($n = 6$) considered the SMAS as layer 2 plus layer 3 (ie, the musculoaponeurotic layer including its connections to the skin).

Anatomical Dissections

The series of surgical dissections on the unilateral side of the cadaver faces confirmed the intraoperative finding of a continuous deep plane from deep to the platysma inferiorly, extending up to zygomaticus major and the orbicularis oculi muscle superomedially, which suggested the presence of a connecting SMAS aponeurosis in layer 3. However, (1) shifting the dissection from the deep

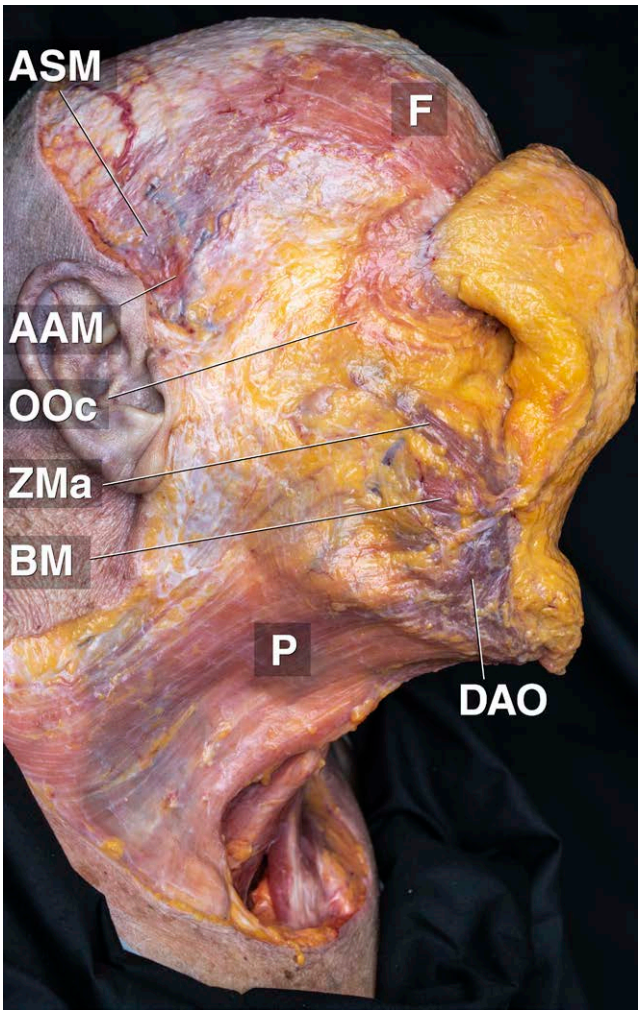

Fig. 2. The musculoaponeurotic layer (layer 3) is demonstrated after removal of the subcutaneous fat. The mimetic muscles are seen crossing the connecting fascia. As all mimetic muscles have a bony origin and skin, mucosa or cartilage insertion, they transition through the deep and superficial fascia. The presence of a dividing layer 3 is evident in the forehead, temple, and neck, marked by flat muscles/aponeuroses. The area between the upper edge of the platysma and the lower edge of the temple (inferior temporal septum) does not feature a defined layer 3. Note how the anterior buccinator muscle lies bare after removal of the subcutaneous fat, demonstrating its nature as a facial nerve–innervated mimetic muscle of layer 3 (see also Fig. 6). *ASM*, auricularis superior muscle; *AAM*, auricularis anterior muscle; *F*, frontalis muscle; *OOc*, orbicularis oculi muscle; *ZMa*, zygomaticus major muscle; *BM*, buccinator muscle; *P*, platysma muscle; *DAO*, depressor anguli oris muscle.

plane to the supra-SMAS plane at the lateral border of zygomaticus major did not involve crossing an aponeurotic layer in any of the dissections, and (2) the depth of the dissections was more reliant on experience than on the visualization of a true aponeurotic layer. The inferior temporal septum provides a naturally thicker fibrofatty separation between the temple space and the midcheek deep plane dissection, protecting the frontotemporal nerve branches. A deep temple dissection and deep plane midcheek dissection could therefore never be connected.

In the series of standardized sharp-layered dissections on the contralateral side of the same cadavers, an aponeurotic layer 3 in the anterior midcheek could not be demonstrated (Fig. 2). Although the galea, STF, and platysma were clearly distinct layers that could be isolated by dissecting on their superficial and deep surfaces, no such aponeurotic sheet could be found in the midcheek anterior to the parotid gland. One, two, or three sheets of fascia-like tissue (or "SMAS" layers) could be surgically created, depending on the thickness of the dissection decided by the dissector. These different sheet-like connective tissue layers were created out of one composite tissue layer, similar to slicing cheese. They were not distinct sheets before their dissection. When strictly dissecting only the aponeurotic layers present, a clear gap was consistently visualized between the STF superiorly and the platysma inferiorly (Fig. 3).

Sheet Plastination

Sheet plastination slices in the axial, coronal, and sagittal plane (Fig. 4) demonstrated a well-defined layer 3 over the parotid gland, but not anterior to the parotid gland. Accordingly, there is a clear absence of a dividing layer 3 between the OOc and ZMa superomedially and the platysma inferiorly. The platysma inserts into the buccinator and modiolus and no aponeurosis continues superior from this point into the midcheek. The different facial muscles transition from their bony

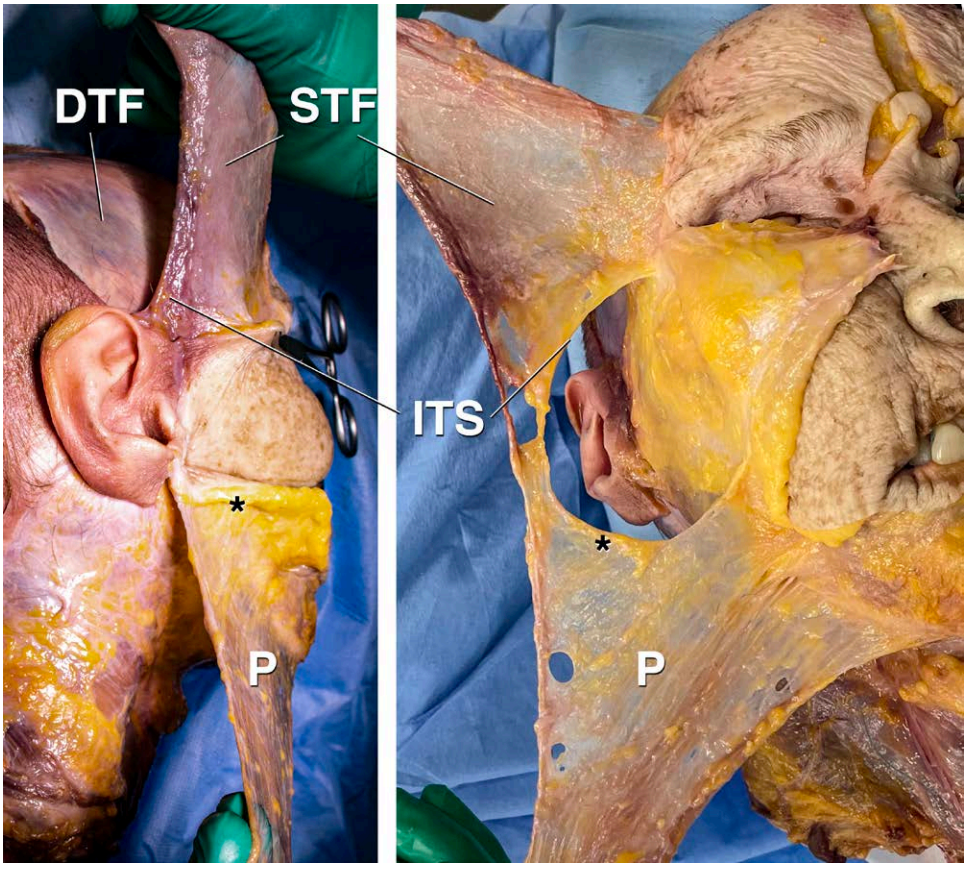

Fig. 3. Layer 3 is evident with layered dissection of the occipitofrontalis (galea) over the scalp, the auriculares muscles (STF) over the temple, and the platysma over the neck. In the middle third of the face, a similar continuous membranous connection between the muscles is not evident, as exemplified by the gap in layer 3 seen on the *right*. *Asterisks*, upper boundary of the platysma.

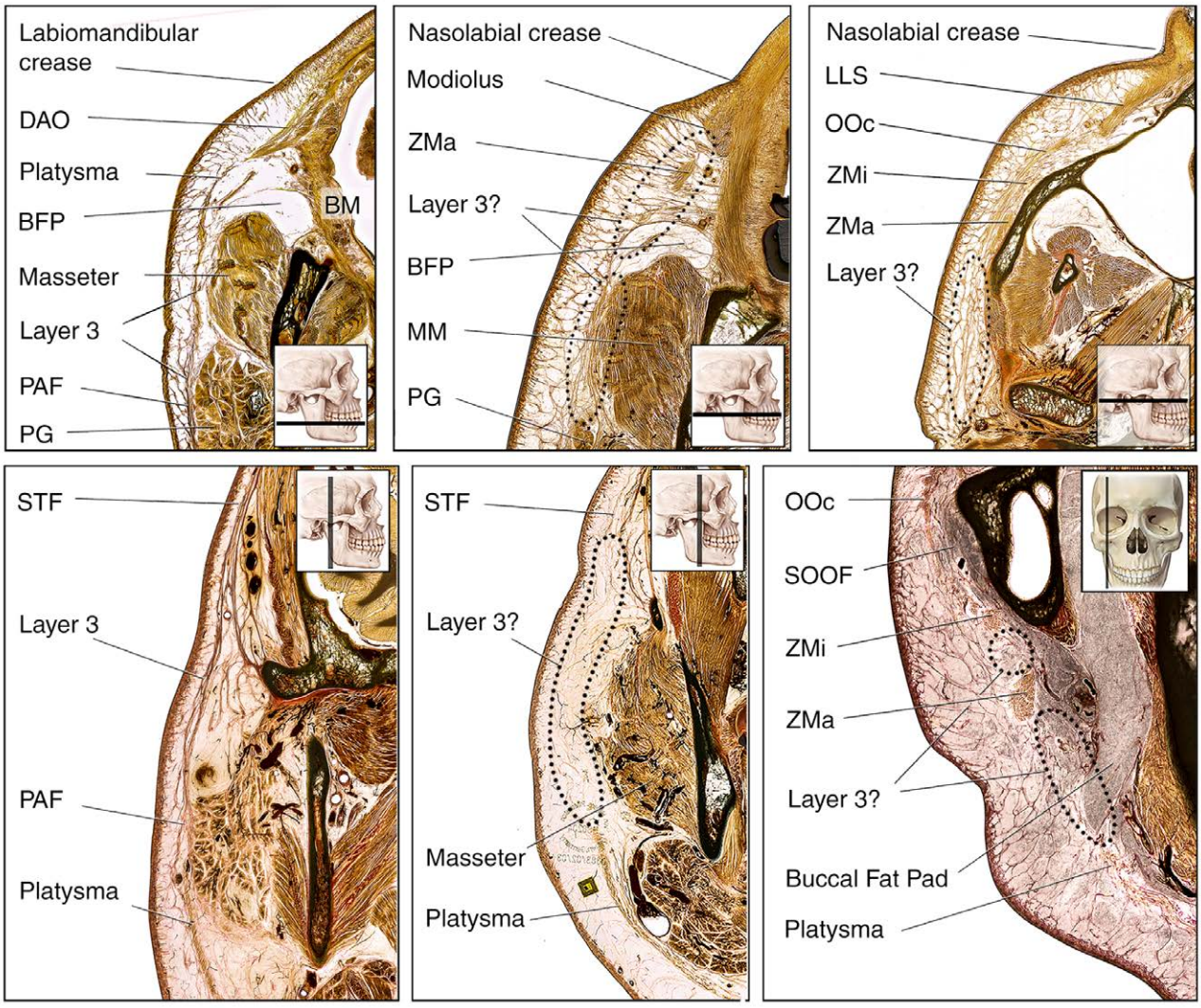

Fig. 4. Sheet plastination of the midcheek in the axial plane (*above*), the coronal plane (*below*, *left*, and *center*), and the sagittal plane (*below*, *right*). (*Above*, *left*) Axial section through the lower face at the level of the lower lip demonstrating the platysma and platysma-auricular fascia (*PAF*) as layer 3 dividing the subcutaneous fat from the deep fat. The platysma is seen inserting into the buccinator muscle (*BM*). *DAO*, depressor anguli oris; *BFP*, buccal fat pad; *PG*, parotid gland. (*Above*, *center*) Axial section through the midcheek at the level of the upper lip demonstrating how the connective tissue within the subcutaneous fat runs from the buccinator to the dermis without a layer 3 dividing the subcutaneous fat from the deep fat. The ZMa is seen suspended in the superficial fascia without evident aponeurotic connections to other mimetic muscles. (*Above*, *right*) Axial section through the midcheek at the level of the zygomatic body. In the lateral face, two different types of connective tissue are in close contact: the subcutaneous layer, which is thin and features retinacula cutis superficiales that are oriented predominantly perpendicular to the skin, and the deep layer, which is thicker and features retinacula cutis profundae, which run predominantly parallel to the skin. (*Below*, *left*) Coronal section through the lateral face at the level of the parotid gland. Note the well-defined layer 3 connecting the platysma with the platysma-auricular fascia (*PAF*) and then with the STF. (*Below*, *center*) Coronal section more anteriorly at the level of the anterior masseter border of the same cadaver. Note the absence of a well-defined layer 3 in this area. (*Below*, *right*) Sagittal section from the platysma through the ZMa, zygomaticus minor (*ZMi*), and OOc muscles. Note how a distinct layer 3 is missing in the area between the different mimetic muscles. Instead, the deep fascia is in direct contact with the subcutaneous layer.

origin to their dermal insertion through slightly different planes within a matrix of connective tissue; they are not all within one musculoaponeurotic layer 3.

Histologic Analysis

Histologic analysis clearly demonstrated an aponeurotic layer 3 present only over the posterior half of the parotid area. In contrast, there

is an absence of a distinct aponeurotic connection over the anterior half of the parotid gland and anterior to the parotid gland between the platysma and the STF, OOc, and ZMa (Fig. 5). Instead, over the masseter muscle, the subcutaneous fat (which is part of the superficial fascia and features retinacula cutis superficiales oriented perpendicular to the skin) and the deep fat (which is part of the deep fascia and features more longitudinally oriented connective tissue network) are in direct contact without an aponeurosis separating them. Anterior to the masseter muscle, the malar fat pad can be seen connecting the buccinator to the dermis, with no layer 3 connecting to the ZMa (Fig. 6). Histologic samples of a composite face-lift flap demonstrated the mimetic muscles with areas of connective tissue between but no clear distinct aponeurotic layer (Fig. 7).

DISCUSSION

Based on our literature review and our refined extensive anatomical dissections, macrosection histologic analysis, and sheet plastination, it has been clearly demonstrated that a distinct layer 3 is present only where flat mimetic muscles exist, and over the posterior half of the parotid gland, but not at the in-between areas. In these in-between areas, the subcutaneous fat of the superficial fascia is in direct connection to the deep fat of the deep fascia without the interposition of any substantial membranous or aponeurotic layer 3. Because of the absence of such a layer, we can only conclude that the SMAS

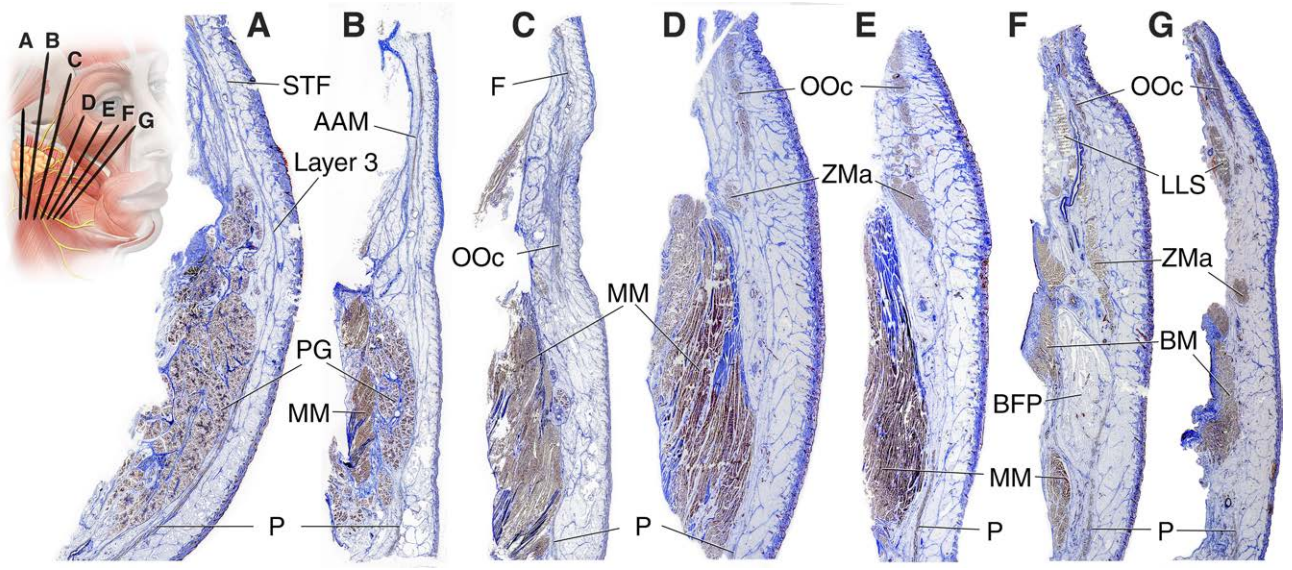

Fig. 5. Histology samples of the midcheek to study the presence/extent of a distinct aponeurotic/fascial SMAS (layer 3), dividing the subcutaneous fat in a superficial and deep part. These sections are presented from posterior to anterior in the face. (*Left*) Section from the platysma (*P*) to the STF over the posterior parotid lying behind the masseter. Note the presence of a layer 3 connecting the platysma to the STF in this area. *PG* parotid gland. (*Second from left*) Section from the platysma to the STF over the anterior parotid area lying on the masseter. Note that a layer 3 between the platysma muscle and the auricularis anterior muscle (*AAM*) of the STF, has become hard/impossible to distinguish from the connective tissue of the deep fascia. (*Third from left*) Section from the platysma to the lateral OOc and frontalis muscle (*F*). No layer 3 aponeurosis can be visualized between the platysma and the OOc. (*Center*) Section from the platysma to the origin of the ZMa on the zygoma and the OOc. There is a layer of deep fascia between the platysma and the masseter. Beyond the upper part of the platysma, this deep fascia comes in direct contact with the superficial fat (superficial fascia), without any layer 3 separating the two. No aponeurotic connection can be seen between the platysma and the ZMa or OOc. Note that the deep fascia is markedly thicker over the superior part of the masseter. (*Third from right*) Section from the platysma to the proximal part of the ZMa, Zi, and the OOc. Again, no layer 3 can be visualized between the platysma and the midcheek mimetic muscles. (*Second from right*) Section from the platysma to the upper lip levator muscles. In this specimen, the platysma is seen inserting into the buccinator muscle (*BM*), with the buccal fat positioned between these two muscles. Although the ZMa is in close proximity to the platysma, there is no direct fascial connection between the two. (*Right*) Section from the platysma anterior to masseter muscle to the medial canthus parallel to the nasolabial fold. The platysma inserts into the buccinator and superomedially from this insertion, the subcutaneous fat lacks subdivision by a layer 3 aponeurosis. Published with permission from Dr. Levent Efe.

does not exist as an anatomical entity. The surgically created composite flap of the platysma and the superficial part of the deep fascia together with the deep part of the superficial fascia is what is known as the SMAS, as will be explained in detail.

What Defines the SMAS?

The term SMAS was originally proposed by Mitz and Peyronie as the entity connecting the various individual mimetic muscles, thereby allowing for complex facial mimicry.[1] The retinacula cutis superficiales were consequently proposed to be part of the SMAS system as the "tendons" allowing the facial muscles to move the skin. However, in the same original article, it was stated that "only after the fat lying superficial to the SMAS is removed is its fibrous longitudinal structure apparent," accompanied by illustrations of a

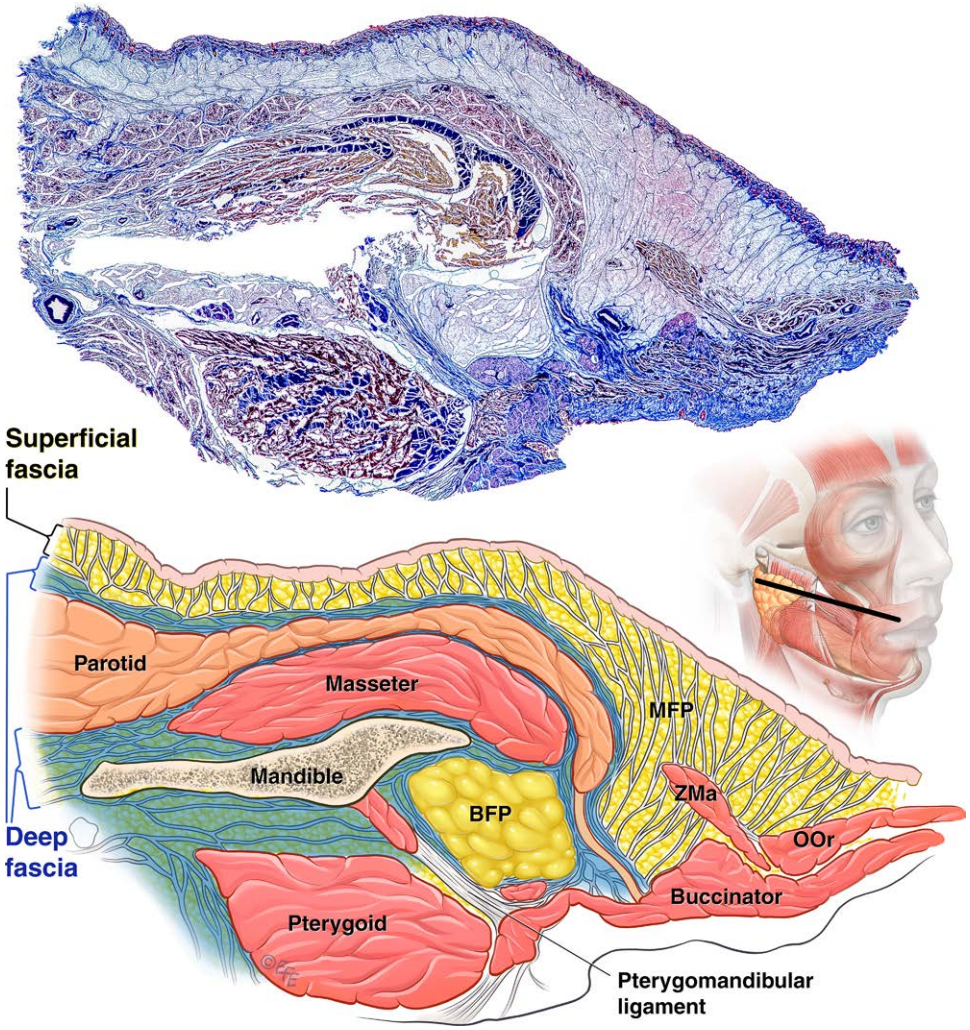

Fig. 6. Full-thickness histology sample (excluding bone) in the axial plane through the midcheek at the level of the parotid duct and upper lip. This histologic sample demonstrates the absence of a layer 3 over the anterior parotid gland and anterior midcheek. The deep fascia, with its typical connective tissue organization in a plane parallel to the skin, follows the curvature of the masseter muscle and overlying parotid gland and duct, to invest both and continue deep to the mandible toward the posterior buccinator. Anterior to the masseter muscle and parotid duct, the connective tissue of the malar fat pad (*MFP*) is seen coming directly off the anterior buccinator to invest the zygomaticus muscles and insert into the overlying dermis. This histology sample demonstrates that the malar fat pad is a subcutaneous entity (layer 2), whereas the buccinator, despite having a deep origin, can be regarded as a layer 3 mimetic muscle, situated directly deep to the subcutaneous fat (see also Fig. 2). Published with permission from Dr. Levent Efe. Copyright © 2023 Levent Efe.

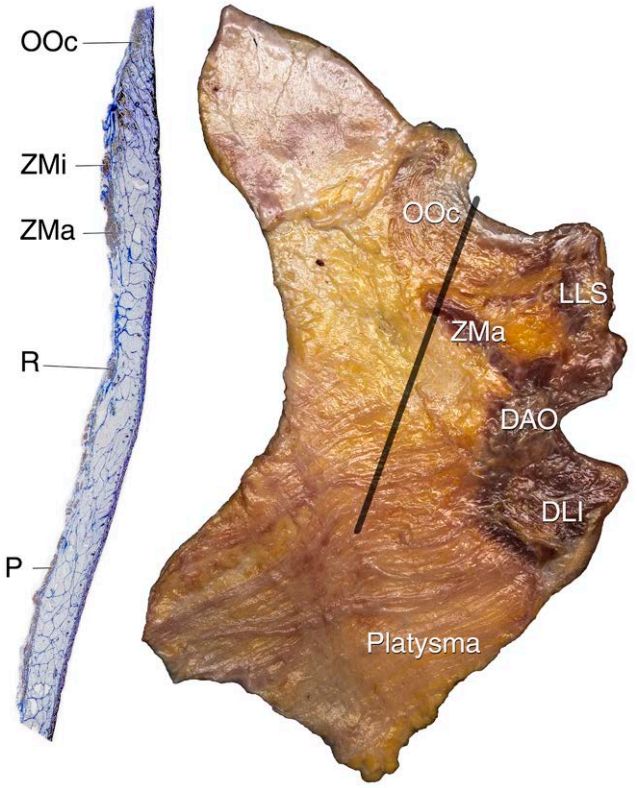

Fig. 7. Histology sample of a composite face-lift flap with the important exception that in this demonstration, the dissection was continued deep to the ZMa and zygomaticus minor (*ZMi*) specifically to maintain any evidence of a connecting layer 3. Note that there is not an aponeurotic layer 3 between the mimetic muscles of this composite flap, but there is a thin layer of deep fascia included in the flap along the gaps between the different mimetic muscles, marked by the typical organization of the connective tissue parallel to the skin surface. This finding demonstrates that the plane of dissection occurs in the most superficial part of the deep fascia.

sheet-like fascia depicting the SMAS. Thus, in fact, the historical article by Mitz and Peyronie introducing the SMAS contained an important contradictory statement: that the SMAS is on the one hand merely the layer of mimetic muscles connected by an aponeurosis (layer 3), and on the other hand, it includes the retinacula cutis superficiales (layer 2). This lack of clarity most likely has been the cause of the confusion regarding the term SMAS throughout the years that has given rise to three different understandings of what the SMAS entails according to our systematic literature review: the mimetic muscle layer (layer 3), the retinacula cutis superficiales in the subcutaneous fat connecting the mimetic muscles to the skin (layer 2), or the combination of layer 3 and layer 2.

An aponeurosis is a condensation of connective tissue often organized in sheets, aiding muscles in their attachment to bone, like thin sheet-like tendons. The SMAS has the "A" for "aponeurotic," depicting the hypothesis of a sheet connecting the different mimetic muscles. Therefore, what defines the SMAS is the presence of a musculoaponeurotic layer (layer 3). In addition, four arguments can be found in the literature to conclude that the SMAS consists only of layer 3 and does not include the retinacula cutis of the subcutaneous fat (layer 2):

1. Most authors (81%) describing and/or studying the SMAS considered the SMAS as being only layer 3.
2. Techniques "superficial to the SMAS" would in theory be impossible if the SMAS included the subcutaneous layer extending up to the skin.
3. If the system of retinacula cutis superficiales (layer 2) by itself constitutes the SMAS, then the SMAS would be present in the entire body and not just in the face.
4. No universally accepted name for "mimetic muscle layer" had been proposed before the term SMAS was first introduced.

Consequently, the five "types of SMAS" previously described by Sandulescu et al. are in fact nothing more than five types of retinacula cutis organizations. These should therefore be considered as different specialized subcutaneous fat layers instead of SMAS.[10]

Does the SMAS Exist as an Anatomical Entity?

The single most important criterion that would confirm the SMAS as a distinct anatomical entity is the presence of an aponeurotic layer (layer 3) connecting the different mimetic muscles and dividing the subcutaneous fat from the deep fat. Because such a layer is absent, we cannot but conclude that the SMAS does not exist as an anatomical entity.

Deep-plane face lifts evolved from recognition of the presence of a strong platysma, which were demonstrated to withstand more tension than skin only.[11–13] Since the introduction of the SMAS concept, the notion has been that this strength was also present in areas where there is no platysma, because of the presumed presence of an aponeurosis connecting the facial muscles.[1] The SMAS was rapidly demonstrated in different facial areas, ranging from the forehead, eyelids, and lips, to the nose.[5,14–16] Perhaps the best example

of how enthusiastically the SMAS was being recognized and reported is the publication of Pensler et al., demonstrating the SMAS in the upper lip, in which the published histologic sections were inverted, resulting in the "SMAS" being incorrectly described as beneath the oral mucosa instead of beneath the skin![14] If anything, that publication demonstrated how arbitrarily connective tissue in the face had been rebranded as SMAS without any predetermined set of criteria.

Interestingly, most studies on the SMAS demonstrated its presence only in the areas of mimetic muscle or over the parotid area, but not in the areas in between. Studies on the in-between areas had actually demonstrated the absence of a significant SMAS aponeurosis over the buccinator, and in between the platysma and the STF.[4,17] And although the SMAS is often cited to be a remnant of the single embryologic muscular bud giving origin to all the facial mimetic muscles, the embryologic study by Gardetto et al. demonstrated the lack of an SMAS in the buccal and midcheek regions, whereas the embryologic study of De la Cuadra-Blanco et al. had demonstrated the lack of continuity between the mandibular extension of the cervical lamina (platysma) and the infraorbital lamina (ZMa) as early as 8 weeks' gestation.[3,18]

Our study confirmed that, despite the strong belief of the presence of an aponeurotic layer 3 connecting the mimetic muscles and separating the subcutaneous fat from the deep fat in the entire face, no such layer is present in between the mimetic muscles. A definite layer 3 is present only over the posterior part of the parotid gland (evolutionary remnant of the platysma; platysma-auricular fascia) and where the mimetic muscles make up layer 3: platysma in the neck and lower face, the OOc in the periocular region, the auricularis muscle (STF) in the temple, and the occipitofrontalis muscle over the forehead and scalp, but not in the areas in between (Fig. 8). In other words, when the mimetic muscles (and its evolutionary remnants) were to be removed from the equation, no evidence of a layer 3 (fascial/aponeurotic) would remain. Ironically, the only area of an aponeurotic layer 3 in the face, the area over the posterior part of the parotid gland, is usually not included in the SMAS dissection, whereas the area of the usual SMAS dissection does not feature a layer 3 at all.

Implications for Rhytidectomy

Clinical evidence from almost 50 years of deep-plane surgery techniques clearly demonstrates the ability to dissect a composite flap, or

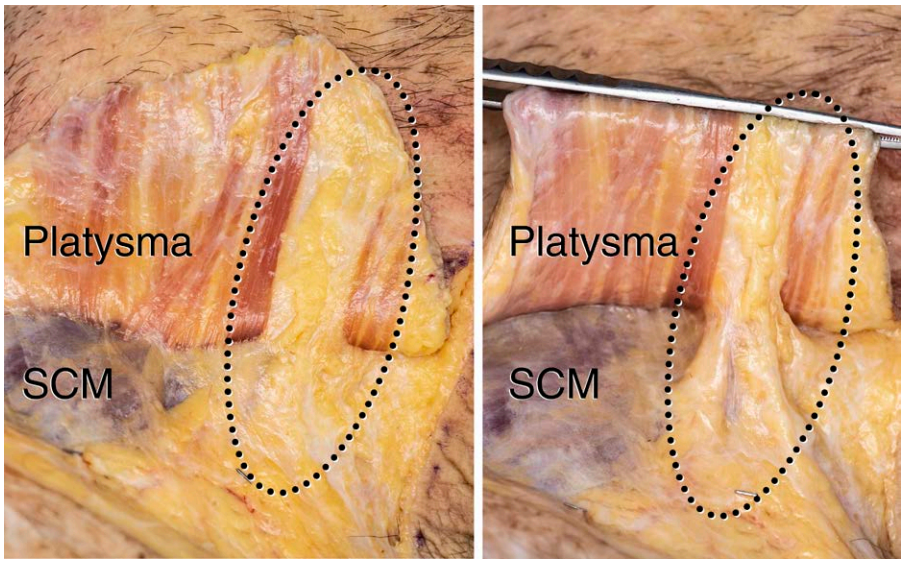

Fig. 8. Dissection image of the neck of a fresh cadaver demonstrating the principle that a layer 3 is only clearly present in the presence of flat mimetic muscle such as the platysma. In the areas where the platysma has an opening, there is no connecting aponeurosis present bridging this gap. In other words, the platysma is suspended within the fascial connective tissue, with the fascia superficial to the platysma being organized more perpendicular to the skin surface and the fascia deep to the platysma organized more parallel to the skin surface.

even a distinct SMAS flap when a wide subcutaneous dissection precedes the deep plane dissection, using the natural "deep plane." The current study can explain the importance of the common practice to "leave a layer of subcutaneous fat on the SMAS in order not to have too thin an SMAS with perforations": there never was an aponeurotic SMAS layer to begin with. The lack of an aponeurotic layer 3 in the midcheek does not necessarily change anything in routine surgical practice, except for refraining from the false notion that the flap can rely on the strength of an aponeurotic layer (SMAS) to hold up the anterior tissues. In a way, the term SMAS by the implication of its aponeurotic omnipresence, is all that keeps this wrong notion of "strength" of the midcheek alive. In other words, unlike the neck or jowls, which are directly adjacent to the platysma, we now have a full understanding that the nasolabial fold and corner of the mouth cannot be targeted through the "deep-plane dissection," as postulated as early as 2002 by Hamra, who called this anterior midcheek dissection "deep subcutaneous."[19] The position of lifted anterior tissues is therefore dependent on subcutaneous connective tissue (malar fat pad) to withstand postoperative gravitational sagging. This knowledge helps to explain the relative early recurrence of nasolabial folds in traditional deep-plane techniques (in contrast to the longevity of the neck and jowls), and the previously reported lack of strength of the anterior SMAS.[19,20]

One might ask what exactly is lifted in a deep-plane face-lift dissection other than skin and subcutaneous fat in the absence of a layer 3 aponeurosis in the midcheek? A deep-plane dissection occurs within the most superficial part of the deep fascia (in which the facial nerves run more deeply) between its intrinsically horizontally oriented connective tissue (Fig. 9). This typical mille-feuille structure explains the ease of dissecting in the deep plane and lifting the surgical SMAS layer, which includes the most superficial part of the deep fascia. With the deep-plane dissection in the posterior midcheek area, it may be a delicate art to define the correct level, in the most superficial part of the deep fascia. This requires surgical experience; therefore, it requires teaching for surgeons in training. Anterior to the masseter, in the buccal and anterior midcheek, the dissection is simply "deep subcutaneous" as previously stated by Hamra.[19]

The surgical SMAS is therefore the tissue between a subcutaneous dissection and a deep-plane dissection, which on its own is a compound layered flap, as it is composed of a variable thickness of subcutaneous fat and mimetic muscles (eg, platysma, OOc, STF) and a thin layer of deep fascia (Fig. 10).

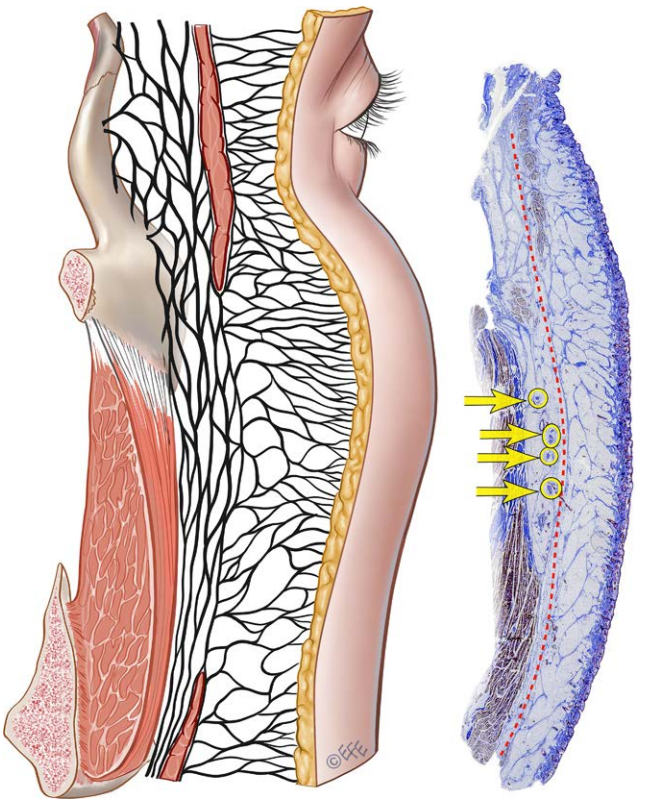

Fig. 9. Histologic sample of the midcheek demonstrating that the OOc is connected to the platysma muscle not by a distinct aponeurotic layer 3, but by the more three-dimensional connective tissue within the deep and superficial fascia layer. The *red dotted line* demonstrates the location of deep -plane dissection. A deep-plane face-lift dissection involves a dissection within the intrinsically horizontally oriented connective tissue of the deep fascia, but superficial to the level where the facial nerves run. The nerves are still safe, being situated deeper within the deep fascia (*yellow arrows* and *circles*). This typical deep fascial structure explains the ease of maintaining a horizontal dissection plane and lifting the surgical SMAS flap. The illustration of the deep and superficial fascia further elucidates the reality. Published with permission from Dr. Levent Efe. Copyright © 2023 Levent Efe.

CONCLUSIONS

A review of the literature concluded that what defines the SMAS is the presence of a distinct aponeurotic/membranous layer (layer 3) connecting the different mimetic muscles that separates the subcutaneous fat of the superficial fascia from the deeper fibroareolar fat of the deep fascia. Because such a layer is absent except over part of

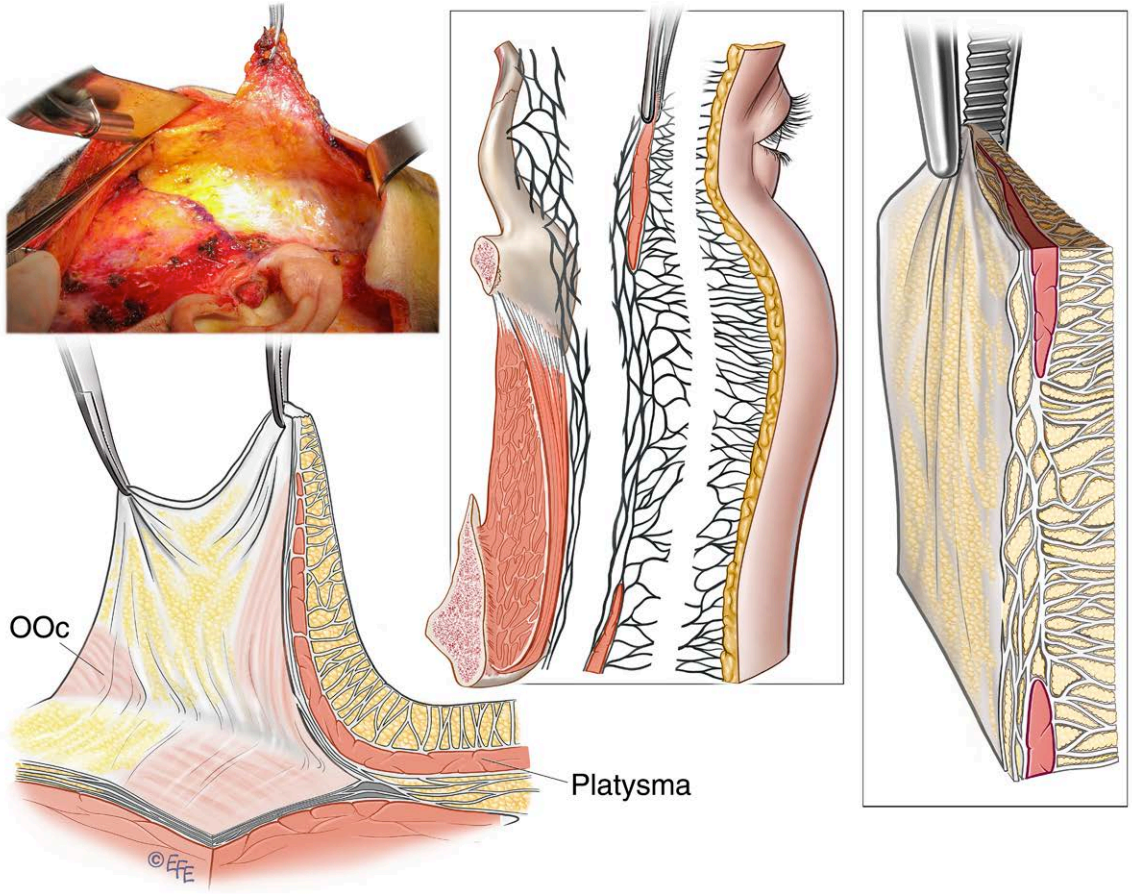

Fig. 10. The surgical (extended) SMAS flap as seen in surgery (*above*, *left*) and an artistic rendering of the composition of this structure (*below*, *left*). The surgical SMAS is the layer that results when a wide subcutaneous dissection precedes the deep plane dissection (*center*). It includes a variable thickness of subcutaneous fat (superficial fascia) depending on the depth of the subcutaneous dissection, and a thin layer of the deep fascia (*right*). The thickness of the SMAS flap is highly dependent on the surgical dissection, not on the anatomy. Published with permission from Dr. Levent Efe. Copyright © 2023 Levent Efe.

the parotid gland (which is not even undermined in most deep plane or sub-SMAS techniques), the SMAS as a distinct anatomical entity does not exist.

The term SMAS continues to have a surgical "meaning," as it is the name given to a surgically created multilayer flap that is formed between variable level subcutaneous plane dissection and a deep-plane dissection. This SMAS flap includes the deep part of the subcutaneous fat (of the superficial fascia) and the superficial part of the deep fat (of the deep fascia) together with the flat superficial mimetic muscles, such as the platysma and the OOc.

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DISCLOSURE

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