

Commentary

## Commentary on: Bilayered Structure of the Superficial Facial Fascia

Mohammed Alghoul, MD

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This is an intriguing anatomic study from South Korea by Kang et al describing the bilayered nature of the superficial facial fascia through dissection of 20 injected fresh cadavers.<sup>1</sup> The authors focused their dissection on the superficial musculoaponeurotic system (SMAS) and the superficial temporal or temporoparietal fascia (TPF) and showed that both can be easily split into superficial and deep layers, separated by a loose areolar plane. Several interesting findings of this elegant and beautifully illustrated cadaver study are worth summarizing here. The superficial layer of the SMAS is continuous with the orbicularis oculi except for the orbital portion, which remained attached to the deep layer. The deep layer of the SMAS was in continuity with the orbital portion of the orbicularis oculi and the platysma. The suborbicularis oculi fat (SOOF) was sandwiched between the so-described superficial and deep layers of the SMAS. The superficial layer of the TPF encased the temporal branch of the superficial temporal artery and was continuous with the frontalis muscle, while the deep layer encased the frontal branch of the superficial temporal artery and was found to be continuous with the deep galea. There was no mention of the temporal branch of the facial nerve and how it related to these layers. Finally, the authors showed in excellent videos that the superficial and deep TPF layers are continuous with the superficial and deep SMAS layers, respectively. Both SMAS layers were found to have similar strength through measurements of ultimate load to failure. The authors concluded that raising the superficial layer of the SMAS alone may suffice for face lifting and could be a safer approach to protect facial nerve branches.

This article challenges the common knowledge that the SMAS is anatomically and clinically a single layer of musculo-fibro-fatty tissue that encases the muscles of facial

expression and is in continuity with the platysma.<sup>2-7</sup> The anatomy and histology of the SMAS has been detailed through numerous articles<sup>2-15</sup> over the past 40 years since it was first described by Metz and Peyronie.<sup>2</sup> There has been considerable debate in the literature on where the SMAS exists in the face,<sup>11</sup> on whether or not it encases the muscles of facial expressions,<sup>12</sup> and whether the SMAS is the superficial fascia or a separate structure located deep to the superficial fascia.<sup>3,10</sup> However, there was never a debate that anatomically, there is a single layer, whether it was named the SMAS,<sup>2,4-9,11-13</sup> parotid fascia,<sup>10</sup> primitive platysma,<sup>10</sup> or fibrous platysma.<sup>3</sup> Two previous early studies that showed a superficial fascia separate from the SMAS did so histologically and acknowledged that anatomically there was one solid layer continuous with the platysma.<sup>3,10</sup> Anatomic and histologic studies by Stuzin et al, Gosain et al, Barton, and Kikkawa et al also confirmed the anatomy of the SMAS as a single distinct layer that attenuates as it progresses medially and invests muscles of facial expression including the platysma and the orbicularis oculi.<sup>4-6,13</sup> A recent histologic study of the cheek by Macchi et al revealed that the SMAS is a single laminar connective tissue layer sandwiched between 2 different fibroadipose connective layers.<sup>14</sup> These findings, that were confirmed by Hwang et al<sup>15</sup> in another histologic study, are consistent with the anatomy of the SMAS, facial fat compartments, and the retaining system of the face.<sup>16</sup>

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Dr Alghoul is an Assistant Professor, Division of Plastic Surgery, Northwestern University Feinberg School of Medicine, Chicago, IL.

**Corresponding Author:**

Dr Mohammed Alghoul, 675 N. St. Clair Street, Suite 19–250,  
Chicago, IL 60611, USA.  
E-mail: [malghoul@nm.org](mailto:malghoul@nm.org)