

The Anatomy Study of the Facial Temporal Region, Age 25-50, in Thai Population Based on Ultrasound Investigation



มหาวิทยาลัยแม่ฟ้าหลวง
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Introduction: Aging, influenced by genetic and environmental factors, affects facial tissues, including skin, fat, muscles, and bones. The temporal region is significant for both function and appearance. Many Thais are increasingly concerned about temporal depression. This area is complex due to its layered structure and blood vessel pathways, posing challenges for safe aesthetic procedures. Advanced ultrasound imaging provides detailed views of the anatomy in this region, which is crucial for precise and safe injections.

Objective: This study aims to use high-frequency ultrasound to map the depth and position of the deep temporal arteries and to explore the basic anatomy of the temporal region in Thai individuals aged 25 to 50, with a focus on structural variations.

Materials and Methods

This **observational cross-sectional study** involved 33 Thai participants aged 25 to 50 years, both male and female, with and without filler injections. High-frequency ultrasound (VENUE GE Healthcare) with a hockey-stick probe (2.5 to 16.8 MHz) was used to map the vessels in the temporal region and to measure the depth and position of the deep temporal artery and surrounding soft tissues. Ultrasound images were recorded, and participants were assessed through questionnaires regarding satisfaction and adverse effects.

Results and Discussions

The study found that the **33 subjects (15.15% male and 84.85% female)** had an **average age of 33.42 years**. It compared anatomical features between **10 subjects with hyaluronic acid filler injections** (average duration: 32.4 months) and **23 subjects without fillers**.



Figure 1: Temporal ultrasound detection perpendicular to the temporal crest at Points T1 and T2 (a), and parallel to the temporal crest at Points T1 and T3 (b)

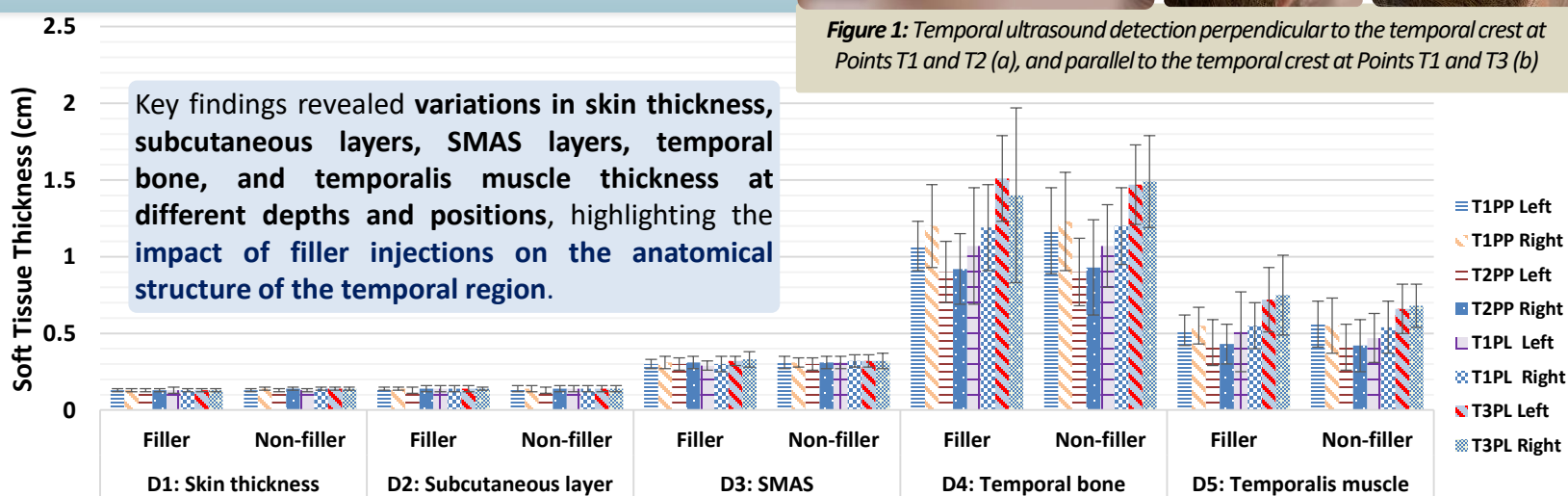


Figure 2: Display Bar graph and error bar showing soft tissue thickness at each on the right and left side of temporal area, including a history of filler injection.

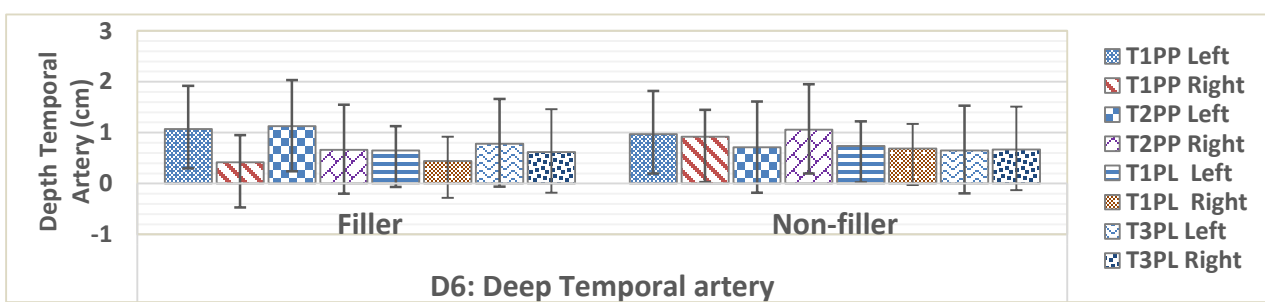


Figure 3: Display Bar graph and error bar showing the depth of the Right and Left Temporal Artery at the T1PP, T2PP, T1PL and T3PL, including a history of filler injection.

Additionally, the study identified differences in the depth and position of the temporal artery between subjects with and without filler injections.

Conclusions

The intricate structure of the temporal region in the Thai population necessitates a clear understanding of the spatial arrangement of each tissue layer to enhance the effectiveness and safety of injectable temporal fillers. Ultrasound imaging aids in comprehending these details and supports therapeutic procedures.

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