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When Buccal Fat Creases the Earlobe: Demystifying the Cardiovascular Association.

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Abstract

We write to clarify the interpretation of our previously published work on the anatomical basis of the diagonal earlobe crease (DELC). In the recent article *"Uncovering the Secret of Diagonal Earlobe Crease"* by Bisoyi et al., our study was cited in a manner suggesting that we proposed a causal relationship between DELC and atherosclerosis. Our work did not propose such causality. Rather, we described a mechanical–anatomical mechanism in which chronic traction on the earlobe, resulting from enlargement of the deep buccal fat pad, may contribute to crease formation. This facial adipose compartment shares structural and developmental similarities with visceral adipose tissue. Accordingly, the reported association between DELC and cardiovascular disease may reflect a shared background of visceral adiposity rather than a causal role of the crease itself. We offer this clarification to support our biomechanical basis of DELC.

Key words: Diagonal Ear Lobe Crease, Frank's Sign, Obesity

To the Editor,

We read with interest the article *"Uncovering the Secret of Diagonal Earlobe Crease"* by Bisoyi et al.[1] The authors cited our study, *"Unified Anatomical Explanation of Diagonal Earlobe Creases, Preauricular Creases, and Paired Creases of the Helix,"*[2] in which we proposed a unified anatomical and biomechanical framework for several auricular creases, including the diagonal earlobe crease (DELC). Given the longstanding interest in earlobe creasing as a possible external marker of cardiovascular disease, we welcome continued discussion of this topic and would like to briefly clarify the interpretation of our findings.

In our study, we proposed a mechanical–anatomical explanation for three auricular creases associated with cardiometabolic conditions: DELC (Frank's sign), preauricular vertical creases, and paired creases of the helix (PECH). We suggested that enlargement of the deep buccal fat pad may generate chronic downward and medial traction on the earlobe, contributing to crease formation. This facial adipose compartment has structural and developmental similarities to visceral fat and may transmit tension to the auricle through the Loré (tympano-parotid) ligament.[3]

Within this framework, the deep buccal fat pad may represent a potential anatomical link between auricular creasing and cardiometabolic risk. Individuals with relatively greater visceral-type facial adiposity—independent of overall body weight—may develop earlobe creases through mechanical forces while also exhibiting systemic visceral adiposity, which is associated with cardiometabolic disease. An illustrative video demonstrating the role of the Loré

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ligament in transmitting facial tension to the earlobe was provided to aid visualization of this mechanism.[4]

In this context, our work did not propose that DELC itself is causally related to atherosclerosis. Rather, we suggested that the reported association between DELC and cardiovascular disease may reflect a shared underlying feature—namely visceral-type adiposity—while the crease itself represents a localized mechanical manifestation.

We appreciate the authors' engagement with our anatomical hypothesis and hope this clarification supports accurate interpretation of the proposed biomechanical basis of this dermatologic sign. Continued interdisciplinary discussion may further advance understanding of the structural mechanisms underlying auricular creases and their clinical correlations.

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