Deep Pyriform Space: Anatomical Clarifications and Clinical Implications

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BACKGROUND: To define the anatomical boundaries, transformation in the aging face and clinical implications of Ristow's space. We propose a title of deep pyriform space for anatomical continuity.

METHODS: The deep pyriform space was dissected in 12 hemifacial fresh cadaver dissections. Specimens were divided into 3 separate groups. For group 1, dimensions were measured and plaster molds were fashioned to evaluate shape and contour. For group 2, the space was percutaneously injected with dyed hyaluronic acid to examine proximity relationships to adjacent structures. For group 3, the space was pneumatized to evaluate its cephalic extension.

RESULTS: The average dimensions of the deep pyriform space are 1.1 cm x 0.9 cm. It is bounded medially by the depressor septi nasi and cradled laterally and superficially in a "half-moon" shape by the deep medial cheek fat and lip elevators. The angular artery courses on the roof of the space within a septum between the space and deep medial cheek fat. Pneumatization of the space traverses cephalic to the level of the tear trough ligament in a plane deep to the pre-maxillary space.

CONCLUSION: The deep pyriform space is a midface cavity cradled by the pyriform aperture and deep medial cheek compartment. Bony recession of the maxilla with age lends this space as a potential area of deep volumization to support overlying cheek fat and draping lip elevators. The position of the angular artery in the roof of the space allows safe injection on the bone without concern for vascular injury.

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