Abstract

Programmed Blueprint of Anatomical Aging Process

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The anatomical structures of the face related to aging comprise of the facial bone, fat tissue, fibrous connective tissue, and facial muscles. The bony tissue is a structure that forms the basic frame of the face and bone remodeling goes throughout a lifelong period. Up to now, it was known that bone resorption is accelerated and morphologic changes take place in the marginal area of bones, such as the orbital rim, maxilla, and the mandible. However, there is no any evidences of these bone resorption process and there are some controversy about this. Fat tissue shows different aging processes between superficial and deep fat of the face. In the superficial fat, drooping appears due to gravity. In the deep fat, relocation and atrophy take place due to the unbalanced change of the volume of fat compartments.

It is also well known that the structural imbalance between the tethering effect of retaining ligament and the volumetric change of the fat compartment appears as various aging signs such as nasojugal groove. While the ligamentous structure exists in all skin, it has been regarded as a supporting structure especially in the facial skin due to the tiny dimension of the facial structure. Thus, the manipulation of the retaining ligament became important in plastic surgery such as face lifting, and many knowledge of retaining ligament has been accumulated in the last century.

However, the confusion of the concepts originates from which the retaining ligament and fat compartment are not easily distinguishable to the naked eye and differentiation of them mainly relies on the sensation during surgical treatment.

While there were some histological studies to identify these structures, it was not enough to define it clearly. Therefore, the concepts of them have been illustrated which results in the different illustration among papers and textbooks.

In our present study, I would like to identify the anatomical feature of the retaining ligaments, fat compartments, and their topographic relationships using dissections and histologic examinations to investigate clear definitions for them which could be used generally in the clinical area.