

### 5.3 INCISAL ANTERIOR RESTORATIONS

#### 5.3.1 UNILATERAL ABRASION ON THE CENTRAL INCISOR

This young woman was bothered by the distal incisal edge fracture of her tooth 21. Figures 141 to 158 illustrate how the disto-incisal edge of tooth 21 was built up. The

shaping will then be critically evaluated taking morphological considerations into account.



**Fig. 141** The distal incisal edge of tooth 21 of this patient was fractured and showed slight wear. The woman patient had always been bothered by the asymmetrical curve line of her incisal edges. However, after having heard about minimally invasive options, she decided at this point in time to have her substance defect restored.

**Fig. 142** Compared to the laugh line, the missing distal corner of the incisal edge produced a discordant contour there.

**Fig. 143** Analysis of the contours of the anterior teeth revealed a distally ascending curve of the incisal edges of the anterior tooth zones. However, this impression was created only because of the missing disto-incisal edge. Although the loss of substance was relatively minor, the defect obviously produced a discordant relationship between tooth width and tooth length. This fact underscored the impact and functionality of the human perception. Any deviation in proportions of the teeth among each other is perceived as discordant, if not even distracting. Thus, it was understandable that, despite this apparently minor substance loss, the woman's aesthetic sensitivity was bothered enough by this defect to convince her to have it restored by a dentist.



- Fig. 144** On tooth 21, a provisional and diagnostic mockup was fabricated and tried in (see Chapter 3.2) under functional considerations. Next, a silicone impression was taken of the anterior teeth.
- Fig. 145** The mockup was removed after the silicone material had hardened. As a control, the silicone matrix was pressed palatally onto the dental arch. The incisal edge area to be built up on tooth 21 was clearly visible.
- Fig. 146** The tooth surface of tooth 21 was conditioned with etching gel (UltraEtch, Ultradent) and then bonded (OptiBond FL, KerrHawe).
- Fig. 147** To isolate tooth 21, the adjacent tooth was covered with Teflon tape (the tape turned transparent from wetting with primer and bonder). A thin layer of transparent composite, shade T1 (Venus, Heraeus Kulzer) was placed in the silicone matrix, and pressed palatally onto the tooth with increasing pressure. Then, the composite was light-cured.



- Fig. 148** The hardened palatal shield comprised a delicate, primary and stable wall.
- Fig. 149** The first layering component was an opaque dentin material A2 (Venus, Heraeus Kulzer) applied like mamelons (dentin tubules) on the shield.
- Fig. 150** An enamel material with the shade Enamel A2 (Venus, Heraeus Kulzer) was layered over the dentin layer.
- Fig. 151** A final layer of a translucent, cloudy effect material T2 (Venus, Heraeus Kulzer) was applied to mimic the brightness level of the natural tooth.



152

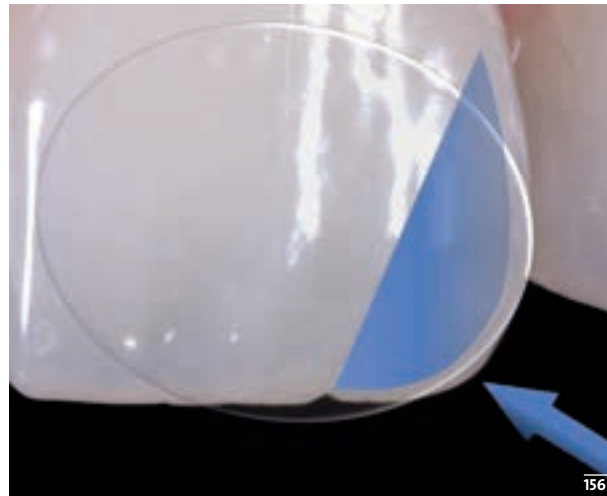


153



154

- Fig. 152** After the incisal edge of tooth 21 was finished and polished, its shade corresponded almost perfectly to the distal edge of tooth 11. A virtually invisible reconstruction was achieved.
- Fig. 153** Even in the lateral view, it was obvious that the structures of the distal portion of the incisal edge descending into proximal area had been reconstructed realistically.
- Fig. 154** When its interplay with the neighboring teeth was viewed from a greater distance, the restoration merged harmoniously into the arch. The proportions of the contour elements were concordant. With minimal therapeutic measures such as replacing a small portion of the disto-incisal edge, the initially uneven looking curve of the incisal edges in the maxilla was compensated to perfection.



- Fig. 155** To check the quality and extent of the reconstructed, shape-determinant portions of tooth 21, ellipsoids were projected onto the tooth surface (see Chapter 2.1). This allowed comparison of the incisal edges of 11 and 21 with each other. Analysis of the blue geometrical figures revealed that the contours of the distal incisal edge of tooth 21 largely mirrored those of adjacent tooth 11. The oblique, ellipsoid form perfectly traced the curve of the disto-incisal edge of tooth 11, although a minor deviation was evident on tooth 21 (see arrow). Apparently, there was a little excess restoration left.
- Fig. 156** Under magnification, the excess portion of the restoration appeared slightly too large, but was not noticeable in the original size. Therefore, it was left as it was.
- Fig. 157** Close-up, the distinctive central incisors look virtually identical in terms of their shape. The shades of teeth 11 and 21 blended seamlessly into their surroundings. In this sense, the goal of "Restitutio ad integrum" was certainly accomplished – everything was restored to its proper state!
- Fig. 158** The delighted woman directly after the treatment was concluded. Her harmonious lip and laugh line were successfully reconstructed. The asymmetry deriving from tooth 21 was eliminated and this attractive woman's little beauty flaw had disappeared.

#### SUMMARY

If the criteria for an anatomically correct shaping and contouring are met, small chromatic differences in layering will go unnoticed and will not detract from the overall quality of a restoration. In such a restoration, even the

most critical observer will not notice the chromatic deviations at normal speaking distance. By contrast, an asymmetrical, obviously discordant appearing silhouette will always be perceived.