iously exposed gums and can addi-
tionally reduce the amount of gum
tissue that must be removed during
the gingivectomy.

Case No. 1
A 27-year-old female presented with
13 mm vertical index (VI) request-
ing that her “gummy smile” be cor-
rected or reduced. The average VI is
17–21 mm. Therefore, her VI would
be esthetically pleasing if increased
by a minimum of 4 mm, reducing the
gum-to-teeth ratio.

The patient’s teeth were out of
proportion, with the length to width
ratio of the central incisors almost
identical rather than the esthetically
pleasing ratio of 75 to 80 percent
width to length. Her gums were
inflamed and in poor condition.

Therefore, she was first referred to a
hygienist for cleaning, root planing,
deep scaling and debriding. (Fig. 1)

At physiological rest, the K7
Evaluation System showed that the
patient’s VI increased to 17 mm
before any gum tissue was removed.
The tooth-to-gum ratio had already
been increased significantly. The
Golden Proportion equations were
also utilized. The patient’s golden
vertical index calculated at 16.7 mm,
and the orthotic gave her a VI of 17
mm (Fig. 2).

It was determined that the patient
would have an even greater esthet-
ic result by further increasing the
tooth-to-gum ratio. Sounding deter-
ned that 2 mm of gum tissue could
be removed safely, an additional 2
mm was burned away utilizing a
diode laser.

The diode laser immediately cau-
terizes the tissue and causes less
bleeding and less postoperative
stress for the patient than other gin-
givectomy methods.

In the image (Fig. 5), gum tis-
sue has been removed from three
teeth, showing the additional verti-
cal length compared to the remain-
ing teeth. The healing process fol-
lowing the diode laser gingivectomy
is approximately two weeks.

Sounding indicated that a gingi-
vectomy alone would have allowed
for the removal of no more than 2
mm of gum tissue. In this case, the
patient’s VI would have increased
only to 15 mm, leaving her with a
gummy smile even after the proce-
dure was complete (Fig. 4).

After administering a local anes-
thetic, a frenectomy was performed
on the patient to further release the
upper lip and reduce the gum-to-
tooth ratio (Fig. 5).

The bite was checked again and
the temporaries were applied. The final VI increase for the patient
following the bite correction, fre-
nectomy and gingivectomy was 6
mm, increasing the VI from 15 to
19 mm. While the increase could
have remained at 17, the additional
2 mm was an esthetic improvement
(Fig. 6).

After the veneers were applied
and the gums had healed, the patient
showed an exceptional reduction
in her gummy smile, as well as
increased gum health with proper
stippling (Figs. 7a, 7b).

Case No. 2
A 37-year-old female patient pre-
sented with a 12 mm vertical
index and complaints of an overly
gummy smile. Although her gums
were healthy, she was referred to a
hygienist for a thorough cleaning
prior to her procedures.

The patient’s central incisors
were 9 mm wide, while the Golden
Proportion is 11.6 mm. The patient’s
golden vertical index, therefore, was
18.8 mm, which was an increase of
6.8 mm from her current VI (Fig. 8).

Measurements of the patient’s
teeth showed that the width-to-
length ratio was almost identical
(Fig. 9).

The Myomonitor and K7 Bite
Evaluation System determined that
the patient’s bite could be opened
to a VI of 17 mm, which was a sig-
nificant increase of 5 mm from her
original VI. The patient wore an
orthotic for a period of one month,
after which her bite was rechecked
and temporary teeth applied (Fig.
10).

Sounding determined that 2 mm
of gum tissue could safely be
removed. After a frenectomy and
 gingivectomy utilizing the diode
laser, 2 mm of tissue was removed,
further increasing the patient’s VI to
19 mm, allowing for an exceptional
correction to the gummy smile con-
dition of 7 mm from the original 12
mm VI (Figs. 11a, 11b).

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