

In Control of Color and Aesthetics

Experiences with APVolution S

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In this article I want to give a summary of some of the most important steps in ensuring a most predictable and aesthetically pleasing result, which is the fun part of being a dental technician. The joy of a happy patient gives us all the energy to go on to the next challenging case, and makes up for some of the unpleasant moments we all share at times.

Increase the odds of success:

For anterior restorations, thorough planning increases the success rate as much as it improves the final aesthetic result.

The critical factors of most anterior cases, next to the color, are the right length, midline and horizontal proportions (Fig1& 2).

Too often in my career as a dental technician, many changes to my work were needed because of poor planning.



Fig.1 finding the right parameters, length midline, horizontal plane



Fig.2 Canine guidance and lingual morphology are often neglected.

...Control

It is important to control the properties of the right margin wax going along with the expansion of the investment. This should lead to clean and sharp margins without significant adjustments. (Fig 3,4,6).



Fig. 3 nicely sealed margin and a sprue which is straight onto the incisal edge



Fig 4 Easy Vest-Premium investment



Fig. 6 clean press result. and sharp margins.



Fig. 5 suggested angle of sprue in a sectioned investment ring, AP 200

The right area to place the sprued crown is on the edge of the piston. (Fig 5).

Transferring the right metrics:

The temperature inside a press ring varies and increases from the inside to the outside. In this case the expansion ratio according to the instruction is 14ml liquid and 9ml of distilled water led to an instant perfect fit (Fig. 7).



Fig:7 well fitting crown is the expected result.

(Fig 4) Easy Vest- universal investment. A crucial part is to safely and precisely transfer the most important information. As mentioned above, these are LENGTH, MIDLINE & HORIZONTAL levels. All too often these significant levels are ignored, which lead to adjustments again and again.

I agree with many of my technician friends who share the experience that not every dentist is willing or capable to supply the lab with the diagnostic cast before the preparation appointment. Keep trying!! Perseverance will prevail!

Cut back technique

In order to be “in control”, the reduction of the anterior crowns is done in a step-by-step approach. At first, a precise and defined reduction will be cut with the Z-Shape No.1 from the incisal edge to the cervical margin.

The depth cut at the incisal edge is at its deepest level and is gradually getting thinner towards the cervical. The right amount for the cutback is about half the thickness of the incisal edge (Fig 9-10).



Fig. 9: defined reduction from incisal edge to cervical margin



Fig:8 The pressed crowns on the solid model

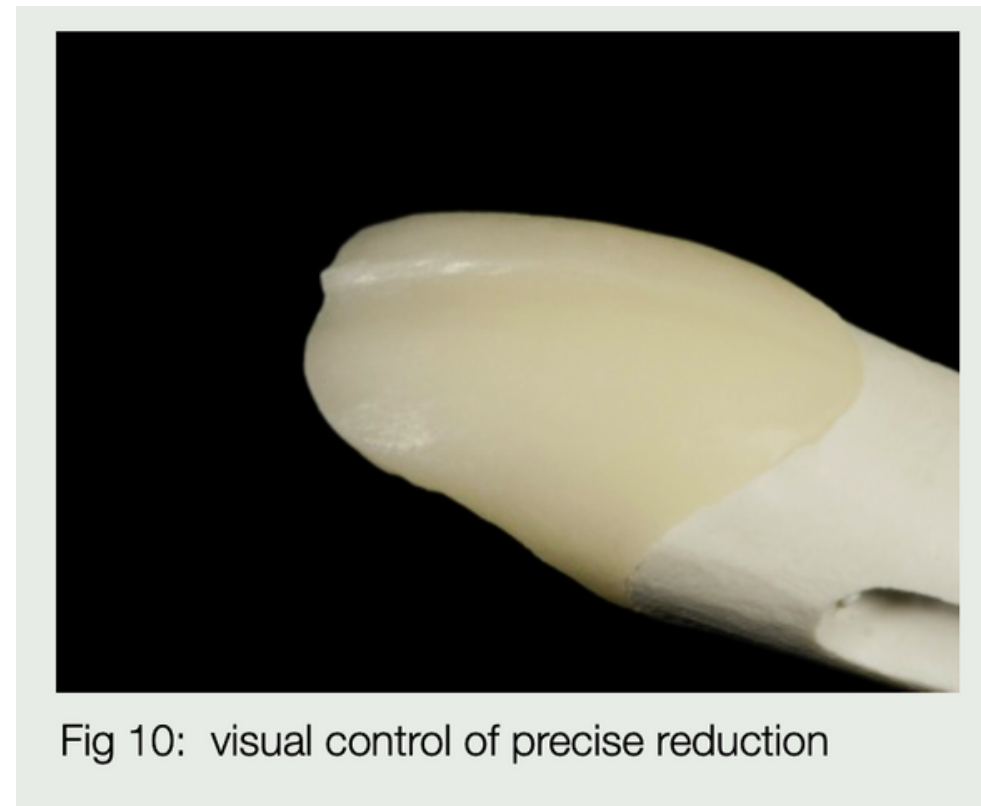


Fig 10: visual control of precise reduction



Z-Shape No 1

After completing the cutback for this single incisor, the procedure will be repeated with the remaining teeth.

... Color

The illusion of depth through internal staining technique

Creating depth comparable to a true 3D effect is something different. The same way as a painter creates the illusion of depth painting a landscape, the same principles can be applied for the internal staining technique.

With the right variation of color, an illusion of depth can be created between brighter zones and zones of various modified grey tones.



In addition to these colors, raising opacity and mixing it with enamel effect colors will maximize the vitality of the restoration.

Using internal stains requires the right understanding of the colors and their intensity.

Often, less is more! Needless to say that at times the patient has a different view of the internal beauty of a natural looking crown.

The following pictures show the system applying a variety of effects



Fig11 incisal blue for approximal areas



Fig12: white to highlight the mesial ridge



Fig 13 a variety of light orange



Fig 14: and deep orange create vitality



Fig 15 white to expose the distal ridge



Fig 16: blue to add translucency to the distal approximal corner



Fig 17: white band in the center to create contrast



Fig 18: increasing opacity with Margin Stain to block discolorations from the prepped tooth.

... Aesthetics

Adding the filter with layers of translucent powders for a lively light reflection.

The vitality of any porcelain and its color depends greatly on the amount of firing cycles.

With the extent of the pressed dentin core, the shrinkage of the layered porcelain is very minimal. This enables the technician to finish the case with one bake only.



Fig 19: before internal staining

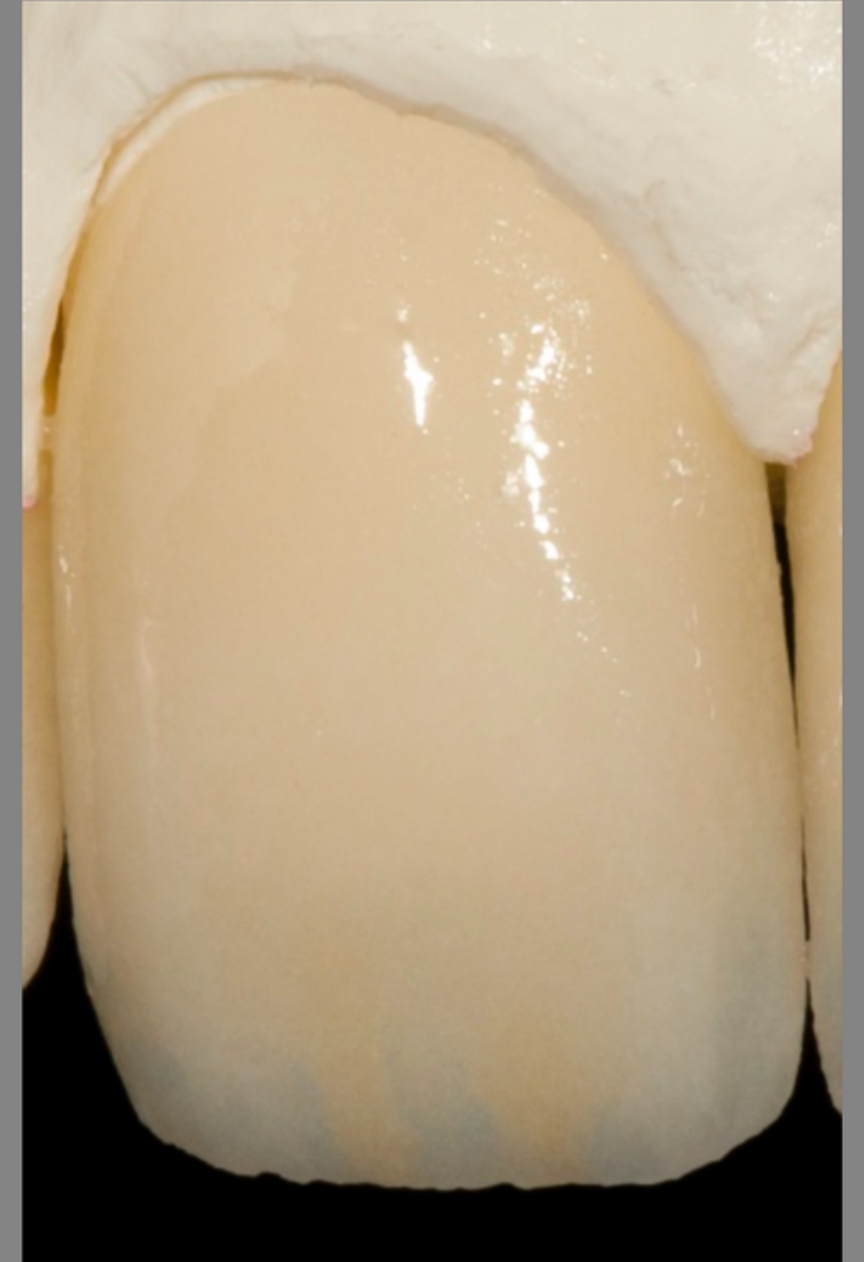


Fig: 20 after application of the AP Stains

When applying the porcelain in different layers, it is most important for the porcelain to have the right moisture. If the porcelain is applied too wet, the colors are often dull and grey and there won't be a defined reflection. On the contrary, if the porcelain is applied too dry, the risk of surface porosities is quite high.



Fig 21 small increments of layers



Fig 22 the porcelain is applied stable



Fig. 23 layers and particles don't mix



Fig 24 completed build up

Conclusion



Fig 25: the final result. The surface is glazed without glaze paste.

It pays to have a good plan of how to approach a case. A systematic step-by-step approach increases the success rate significantly. Difficult color details can be applied with confidence while having visual control.