

## ANDREW C WHEELER

### OWNER OF AW PRECISION CERAMICS

Andrew started his apprenticeship aged 17 at G Randals Dental Laboratories, after qualifying he moved to South Africa to further his education.

Here he specialized in implants, frame design and other aspects of crown and bridge. After six years he returned to the UK to help open and run a large commercial laboratory.

He moved to open his own laboratory 15 years ago dealing with large complex implant restorations and that led to his digital journey.

By investing in 3d printing early on in the industry he gain valuable insight into the future of dental laboratories and where they were heading. As well as running his lab he also lectures and teaches digital solutions within dental laboratories.

## INTRODUCTION

● These are interesting times, we see the rise of the digital work flow combined with skills that have been honed over generations of dental technicians. Neither option can be used entirely on their own, our skills are vital if we are to deliver the patients and clinicians expectations. I aim to demonstrate how this can be accomplished on a challenging case we received recently. We will endeavour to highlight the positive and negative areas of ways of working in both fields.

As in most cases we see, there are always compromises one has to make, both from the clinical side and from the patient. Making the best possible outcome is something we all strive for within those limitations, and in some areas having a digital solution goes a long way to help. However, twenty years of the analogue approach is hard to dismiss and as we shall see, on occasion using a pair of hands, rather than a machine is a much better way forward!

## HISTORY

This 55-year-old male patient presented with numerous dental problems with the desire to improve function and aesthetics. The patient had implants placed overseas in the upper right quadrant some years ago, in combination with a removable partial denture. He has struggled over many years with a badly fitting denture and expressed a desire to have something more permanent. As with many patients he had a history of patchwork dentistry, good and bad, trust in the dental profession was at an all-time low.

## TREATMENT PLAN

It was decided that eight Ankylos not as shown implants would be placed in the anterior and posterior regions. Crowns would be placed on the canines and once these had been restored, we would remove his existing bridge and restore the right quadrant. This would maintain his occlusion as the restorative work was being carried out. The upper left eight will be left alone. His occlusion is stable and he has no pain or discomfort, one of the reasons for restoring in sections. The implants have integrated and the next step is to fit the abutments and crowns before preparing the canines and removing the existing implant bridge.

We discussed with the patient the choice of materials and settled on zirconia abutments in the anterior region with all ceramic, Celtra press crowns. Posterior would be titanium abutments with cemented bonded crowns. All the abutments would be sent to Atlantis to mill.



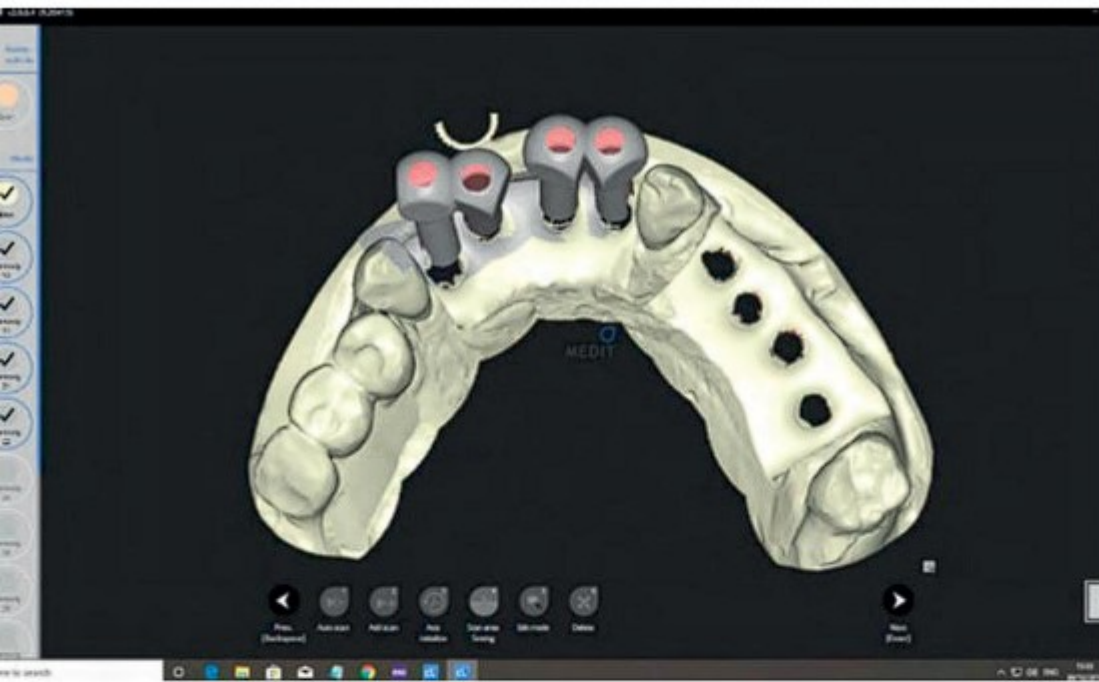
## LAB PR

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Having procedure of Atlantis



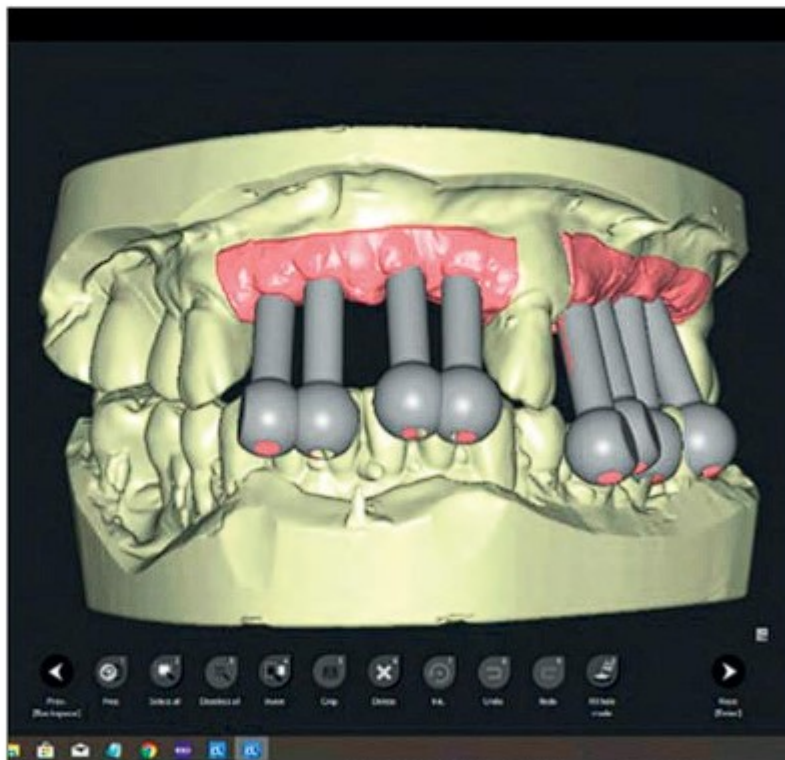


## PROCEDURE

Alginate impression were taken, selected a wax bite and special tray for implant impression. Models were made and the case was articulated. Then the digital side of the model was made and one which has made the patient's life much easier. In the past we could now be ordering semi-customized abutments to be waxed, milled and cast, a very time-consuming process. We scroll forward and now we have a range of scanners and milling machines that are as good producing highly accurate and cost-effective implant abutments. Our job is now to provide the right information to do the job. We have been using Medit scanners for years and have found them to be an accurate and reliable machines.

In an ever evolving market some of the improvements have been real time updates. In the past one would have to order a new set of markers for a case like this but with the flexible die feature we can reuse the marker and scan each implant site, saving the marker each time. A very cost-effective way of working. As you can see in the picture, we are halfway through the process with whole model taking no more than 10 minutes to complete. As this information is sent to Atlantis, we have no waiting time to add on as they design the abutments and send a series of pictures to us to adjust and change as you see fit.

It extols the virtues of the digital workflow. I don't use the core file option. This allows you to download



the finished abutments so you can start work on the digital design of the crown and bridge work. This useful idea can save a considerable amount of time if you plan to mill or print the crowns for pressing. However old habits die hard, I do like to double check the position and emergency profile of the abutments before I start the

next stage. Adjusting the finishing line of an abutment is something I do regularly.

## CONCLUSION

In part two I will complete the restorative part of the case, by digitally designing, printing and hand finishing the crowns.