The Use of 3D Modelling During the Consent Process To Better Manage the Maxillofacial Patient

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Introduction

As surgeons we sometimes get lost in the technical aspects of surgery and how to perfect our surgical skills. However it is equally vital and important to ensure our patients are well informed and that the consent process runs throughout their treatment phase. The General Medical Council states that “the exchange of information between doctor and patient is central to good decision-making.” 3D modelling is regularly used in Oral and Maxillofacial Surgery for treatment planning and management of various cases including but not limited to oncology, prosthodontic, restorative and TMJ. (*R.K. Kontio et al, 2015*). However, there is great opportunity to use this imaging and modelling technique to better manage the Maxillofacial patient, by allowing improved patient education and therefore enhanced informed consent, in both the elective and trauma settings.

Method

3D models were printed in these two examples to visualise the degree of disease and trauma for the patient and the surgeon. The models were then used to aid with surgical planning and intervention.

Patient 1 is a 17-year-old female who required treatment for the management of an odontogenic keratocyst in the left body of mandible. The model allowed visualisation of the extent of the disease and any impact on adjacent structures.

Patient 2 is 20-year-old male with a displaced right zygomatico-orbital complex fracture as a result of trauma. The model allowed planning and visualisation for customised plates.

Results

Having the models available meant improved patient education and more thorough consent process. The patient is able to see the extent of their disease or trauma allowing for better understanding of proposed treatment.

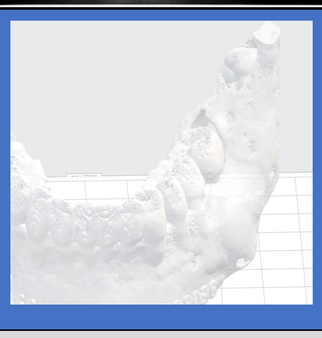
It also allowed more awareness of the risks associated with the treatment including complications and post-operative risks.

Conclusion

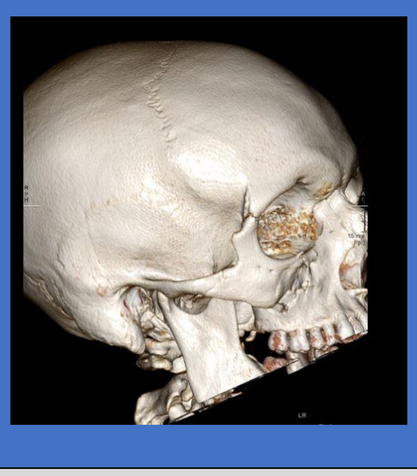
3D modelling has great advantages when used in trauma cases, as well as elective cases.

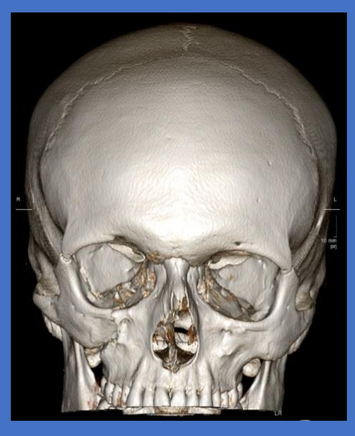
The benefits to clinicians of 3D modelling, especially in surgical planning and customised plating and cutting guides, are already apparent and in use.
However, there is great benefit to overall patient education and informed consent when using 3D modelling for elective use, which should be exploited.

Patient 1



Patient 2





Patient Testimonial

“the model really helped as I was able to visualise it and what it was doing to my teeth. It made it easier to understand seeing it in 3D instead of on the computer or scans”

References: *R.K Kontio, K Mesimaki, P Stoor, A Suomalainen.* ***Rapid Prototype modelling in oral and maxillofacial surgery: A two year retrospective study****. J Clin Exp Dent. 2015;7(5):e605-e612*