

Winning the Battle Against Cancer

CASE HISTORY

A patient had to undergo the surgical ablation of most of her nose, because of a skin cancer that had attacked her right nasal septum.

Following the surgery, a cicatrization period had to be observed before a rhinoplasty was even considered. If no action was taken meanwhile, the patient was at risk of tissue sagging or permanent deformation of the surrounding tissues - which might not be repairable by plastic surgery.

Beyond biological considerations, the psychological after-effects of such procedure on the patient self-esteem and social reintegration had to be measured and taken into account. This body part, more than any other, enables a human being to identify and define himself in relation to his fellow men; that is why there was no

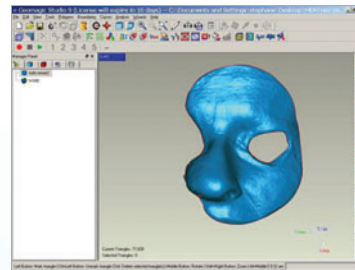


doubt whatsoever that such a prosthesis was of the utmost importance. After careful consideration of all of these factors, the treating physician ordered the manufacturing of

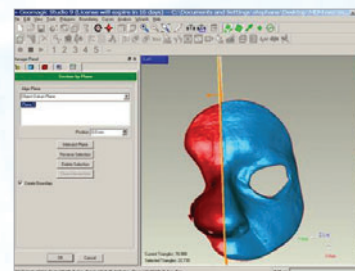
a prosthesis perfectly adapted to the patient's face. However, cancer being a fast-progression disease and free O.R. time being scarce, it was essential to find a fast and effective manufacturing method. This is when Creaform's expertise in 3D scanning was called upon.

A TRANSITORY SOLUTION

Creaform, a world leader in digitizing technologies, has developed and sells the Handyscan 3D line-up of laser scanners. These revolutionary scanners allow the scanning of existing objects in order to generate digital files that can be modified and edited



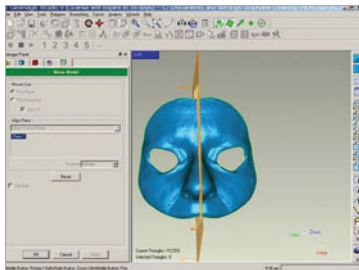
in various post-treatment software. Thanks to this state-of-the-art technology, it would be possible to create a well-adjusted, comfortable and natural-looking prosthesis.



Once the project stakeholders have agreed on an action plan, the first step was to create a silicone moulding of the patient's nose before the surgical ablation. The left half still being healthy, it would be used as a model to reproduce an identical and symmetrical half of the right side. This is a painless and non-traumatic procedure for the patient and requires very little time, aside from the silicone's drying time.

That is when Creaform's specialists came into play: an accurate digital imprint of the silicone mould had to be done. The data from the silicone imprint were collected with the handheld auto-positioning laser scanner REVscan™ in just under 10 minutes!

HALF AN HOUR TO RECREATE HALF A NOSE



Once the 3D data from the mould were acquired and the STL file was generated, Creafom's CAD (computer-assisted design) Department

team used a post-treatment software in order to modify the digital model of the mould following the guidelines provided.

First, the right part of the nose (the part that was to be surgically removed) was deleted from the file and was replaced by the symmetrical image of the left half. The useless surfaces (the forehead, the outline of the eye and the cheek) were also deleted during that step. Finally, the 3D model was added a thickness and prepared for rapid prototyping (during that process, a specialized machine "carves" an object in a given material from the information it acquires from a digital file). Using a pain-free method such as scanning, the patient was provided with a paintable prosthesis that was affixed to her face and that would prevent additional damage while waiting for the rhinoplasty.

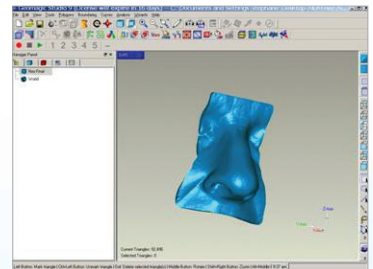
All in all, the process roughly took 30 minutes of work: such efficiency speaks for itself!

A VERSATILE PROSTHESIS

Such a prosthesis offer numerous benefits, of which the possibility of using it as a model during the rhinoplasty or during the moulding process of support elements for the flesh and the respiratory track during the intervention, if the latter are still functional.

TECHNOLOGY FOR THE WELL-BEING OF PEOPLE

Thanks to the precision and speed offered by the handheld and self-positioning 3D laser scanner REVscan and to the expertise of the Creafom people, it was possible to create a prosthesis for an oncology patient in a very short timeline, without causing any delay in the procedure schedule and thus giving the patient the best chances for a quick and complete recovery. Moreover, this technology has the virtue of contributing to the self-esteem and well-being of sick people and enabling them to feel confident about their future.



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