

# Forensic facial reconstruction: manual versus digital techniques in a simulated case report

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## ABSTRACT

Identification methods require a suspect to confront ante mortem data and when there is no evidence to find a suspect, Forensic Facial Reconstruction (FFR) can be very useful. The FFR is performed based on the pre-determined anthropological profile and following mean values of soft tissue thickness found in the literature. The FFR can be done by manual technique, in an artistic way, by modeling the face with clay or other similar material, or digital, with the aid of computer graphics. The final result is not the total precision of the face, but an approximation that can lead to the recognition of the victim by some familiar or friend, so that, if there is a suspect, conventional analyses for the establishment or not of identity can be followed up. The objective was to perform both techniques in a same didactic artificial skull, determined as male, between the ages of 30 and 40 years, predominantly caucasian, and compare the results obtained, as well as the difficulties and differences found between the two techniques. The FFR manual protocol was based on Wilkinson and Ryan (2012), while the digital protocol was followed on Moraes and Miamoto (2015). In both protocols, the soft tissue thickness table proposed by Beaini (2013) was followed. The influence of the operator was verified throughout the manual technique process. Nose, mouth, ear and eyes required greater manual dexterity of the operator in this technique. The greatest difficulty in the execution of the digital technique was in relation to the eyes, since whenever the final texturing was attempted, they disappeared or changed color. The texturing of the skin also represented an obstacle, since the software did not respond to the commands as the literature indicated. The time to perform the manual FFR was two days while in digital it was spent ten days. It was concluded that it is possible to perform FFR by the two methods by inexperienced people, being the manual technique more subjective and digital with greater complexity and difficulty in the execution and the final faces presented physical similarity.