Research Theme Regarding Contributions in the Microsurgical Domain

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Purpose: Microsurgery is a general term for surgery requiring an operational microscope. We believe that it is one of the most promising and complex branches of medicine, where we can hopefully bring significant contributions. We have developed a series of games and procedures that will allow the surgeons to improve themselves by practicing different techniques, such as suture or incision at a micro and macro level. Procedures: A.The surgeon’s mark The surgeon’s mark is a procedure that we have developed in order to analyze and test a surgeon’s incision. It utilizes an oscilloscope, two piezoelectric sensors, a skin-like material and a scalpel. The trainee will be tasked to make an incision, and based on the graph given by the oscilloscope, we will be able to say whether the incision is good or not. B.Precision games This game involves the use of a metallic frame in several situations, a scalpel and a multimeter, both the scalpel and the frame connected to it. The trainee will be tasked to complete several routes through the metal frame as fast as possible. At the end, he will be evaluated based on several predefined criteria. C.Study of the tremor of the hand This study shows how the tremor of the hand can influence a surgeon’s capability of going through a predefined route, with a general width of 1mm . Results: We have developed several generalized procedures and games that will allow the surgeon or the trainee to practice their skills.

Awards Won: