Is Beef Tongue an Alternative Similar to Human Skin for Training in Surgical Technique?

Jefferson A. Pires, MD*; Fernando P. da Rocha, PhD†

Sir,

The Federal University of Pelotas was the first in Brazil to prohibit the use of animals for training residents in surgical techniques, such as sutures, in 2006. Thus, it was necessary to find a simple and low-cost alternative, without ethical implications and a material similar to human skin for the surgical training of students.

Among the existing alternatives, beef tongue has been used because it is easily available and low cost; however, is it similar to human skin? To answer this question, a study was initiated in 2009 through a course developed and standardized by the Academic League of Plastic Surgery of the Federal University of Pelotas, in the state of Rio Grande do Sul, which includes 3 hours of theory and 5 hours of practical classes, in which the application of local anesthesia to the beef tongue, the use of internal sutures to simulate the closure of subcutaneous tissue, and 4 types of skin suture (intradermal, simple, continuous, and Donati) are simulated (Figs. 1, 2).

After completing the course, all participants answered a standard questionnaire adapted from the Basic Suture Training of the Federal University of São Paulo (BST-UNIFESP)1 and composed of 2 parts, the first being a general evaluation of the course and the second assessing whether the student had already performed sutures in humans and, if the answer was yes, how similar the student thought the tongue was to the human skin, on a scale from 1 to 5 (1 being not at all similar to 5 being extremely similar). These scores were converted to percentages (0%–100%) and similarity was considered for scores ≥70%. In addition, all participants were asked how much better prepared they were to perform suturing in humans, with scores ranging from 1 to 5 (1 being not prepared and 5 being extremely prepared) and a minimum score of 70% being required to deem the student as prepared.

From 2009 to 2013, 308 (N = 308) students participated in the course and answered the questionnaire; 98 (N = 98) had performed sutures in humans and the mean obtained in the item similarity to human skin was 87%. The mean percentage of participants that felt prepared to perform suturing in humans was 91%.

The first reports of the use of beef tongue in the teaching of surgical techniques were written by Quinn,2 Carvalho and Saad-Neto,3 and Camelo-Nunes et al,4 and later Franco et al5 described its use in the teaching of suture and flap technique in plastic surgery; however, none of these authors published an analysis of the similarity between beef tongue and human skin. Thus, our results add to these previous studies and confirm that the
beef tongue remains an excellent model for training in surgical technique, as it is easily available and low cost, has no ethical implications, and prepares students for practicing on humans.

Jefferson A. Pires, MD  
Department of Plastic Surgery  
Hospital of Mandaqui  
3880, 54b, Voluntários da Pátria  
São Paulo, São Paulo 02402-400, Brazil  
E-mail: dr.jeffpires@gmail.com

DISCLOSURE  
The authors have no financial interest to declare in relation to the content of this article.

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