TECHNOLOGY

Surgical Abdominal Wall Model

OVERVIEW

The Surgical Abdominal Wall (SAW) model is a physical/mechanical model developed by researchers at UMB to simulate laparoscopic ventral hernia repair (LVHR) and other abdominal wall surgical procedures. Materials were carefully chosen to simulate skin, tissue, organs, and adhesions associated with abdominal wall morphology and pathology. Distinguishing characteristics of the model include a photorealistic peritoneal layer, tissue deformability, and the ability to use with real clinical instruments, which is an advantage over virtual reality trainers. The model is particularly well suited for training surgical professionals to perform LVHR, but may also simulate adhesiolysis or scope navigation training, for example. Simulation-based training has gained significant momentum and will be a requirement for surgical residencies in the near future. In response, the American College of Surgeons formed a Skills Curriculum Task Force, with the aim of establishing a National Skills Curriculum. LVHR has been classified as 1 of 15 procedures on which residents must receive training and some verification of proficiency. The SAW model has been employed on the UMB campus over the past 2 years to train over 100 residents in LVHR. The UMB researchers also demonstrated the SAW model to surgical fellows during a national conference and found in user surveys that their level of confidence improved after practicing their procedural skills on the SAW model.

APPLICATIONS

Improve surgical outcomes with realistic, cost effective training tool.
Use as part of surgical training and certification curriculum.
Employ for product development to test new surgical tools.

ADVANTAGES

Features such as photorealism and tactile feedback important to better simulate surgical environment.
Much more cost effective, portable, and easily sourced than the commonly used pig model.
Has customizable features and many components are durable for extendable use.

STAGE OF DEVELOPMENT

The SAW model has been utilized for training over 100 residents at UMB and users report improved confidence in procedural skills.

R&D REQUIRED

Further objective validation for use in certifying LVHR skills and manufacturing for widespread use.

LICENSING POTENTIAL

UMB seeks partner for full utilization of the SAW model.

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PATENT STATUS

U.S. Patent 8,297,982, issued October 30, 2012

CATEGORIES

- Devices

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ATTACHMENTS

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AP-2008-024