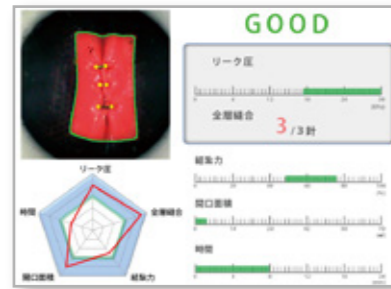


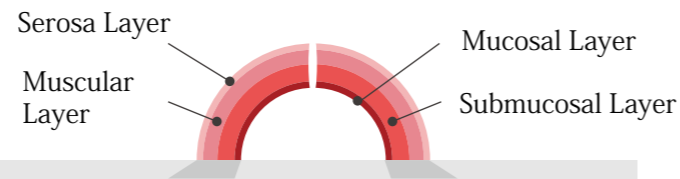
5 Assessment Points of MW16 Simulator based upon statistical evidences

1. Is the wound sutured without leakage?
2. Is suture completed from muscular layer through mucosal layer?
3. Is ligature force appropriate for suture?
4. How much open area are there in the mucosal layer?
5. How long does it take for suturing procedure?

Assessment data based upon experiment data from novices and experts



Four-layer structures of intestinal tract sheet which react like real tissue



Each layer has different levels of flexibilities, which react similarly to human bodies when holding by forceps and suturing

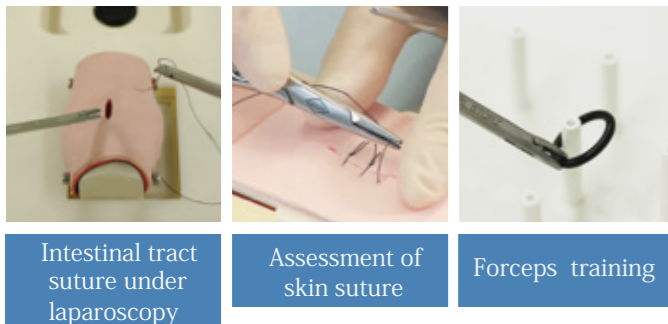


MW16 11395-000 Laparoscopic Suture Simulator -Assessment System-

+α Laparoscopic Suture Training Box
MCM-1 End-Work Pro II



3 Types of Training Possible in MW16 Simulator



The compact training box (End Work Pro II) allows multiple times of suture training



- The high resolution CCD-camera allows clear operating field.
- Eight working fields and the adjustment of height make possible various modes of surgical procedural trainings.

Interview 1

Dr. Kazushi Ito
Associate professor



Center for Medical Education and Training,
Kyoto University Hospital

Laparoscopic surgery have become remarkably widespread due to its advantage in the visual sense. In order to conduct procedures safely, acquisition of basic procedural skills is necessary. Hands-on training using simulators is one of the most effective ways to train laparoscopic suture and ligature skills. Simulator allows medical doctors to get used to the 2D video monitor views in laparoscopy and coordinated movements of vision and forceps. The MW16 simulator assess the doctor's performance of suture and ligature with objective evaluation scales. With the MW16 simulator, learners can repeatedly recognize their problems and reflect them to their patients.

Interview 2

Dr. Koya Hida
Lecturer



Center for Medical Education and Training,
digestive surgeon,
Kyoto University Hospital

We held a contest using MW16 simulator. The best part of this contest is to enhance interaction between doctors from various clinical departments. This time, medical advisors, medical staffs and residents from endocrinology, OB&GYN, and various fields of surgery worked on the intestinal suture tract suture seriously yet in peaceful mood. In actual suture, minimizing leakage is possible by suturing in high density. However, the MW16 simulator asks doctors to suture 3 stitches in a short period of time, which is interesting as a game. Not only can doctors check their own suture, but also measure the leakage, which is fascinating for learners. I would like to provide further learning opportunities that the doctors can enjoy learning.

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MW16 Laparoscopic Suture Simulator -Assessment System-

Specification

Size : W50xD110xH160cm
Weight : 93kg
Power Supply : AC100-240V 50/60Hz
Power Consumption : 180VA

DEVELOP SKILLS
Objective Assessment for Better Training

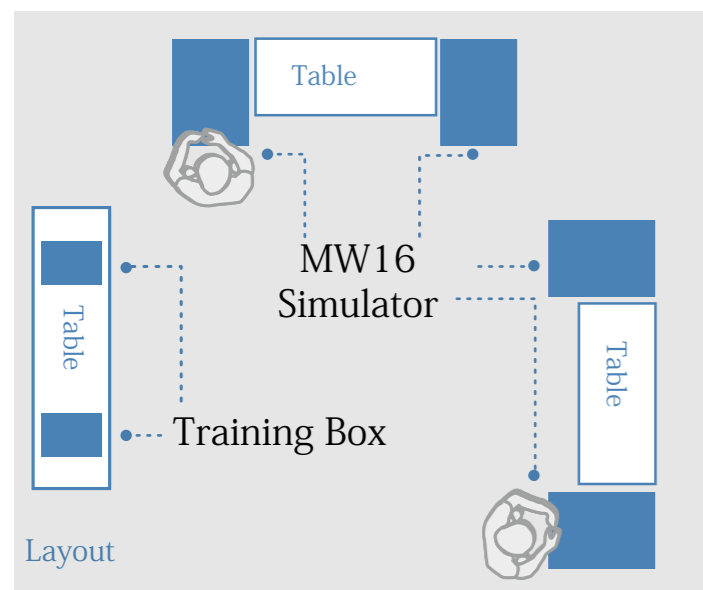


Laparoscopic Suture Training Using MW16 Assessment

- Case introduction from Kyoto University Hospital -

Contest-style Session Utilizing MW 16 Assessment System

Step 1 Preparing necessary items



20 learners in two hours. Please adjust the numbers of simulators depending upon the number of learners.

Things to prepare

- MW16 Laparoscopic suture simulator assessment system.
- Training box
- Monitor for training box

Things to prepare in tables

- Forceps: Two grasping forceps and one scissors forceps
- Suturing string with needles
- Intestinal sheet as part of the MW16 simulator
- Boxes to put needles for disposal
- Timer for training box



Step 2 Training

The following contest-style training takes about two hours

Advance notice

-The actual training proceeds smoothly if the rule is introduced to the learners before the contest. (If you could know the list of participants in advance, you can also decide the teams and announce them)

*What kind of rules necessary for contest?
In order to maintain feelings of tension, time limit (about 15min/person) and the needles in one time should be decided.

Demonstration 15 min

Explanation should be done about the rules, groups and the assessment points in MW16 simulator.
Coordinator should demonstrate how to use the MW16 Simulator.

Contest 90 min

Contest using the MW16 Simulator

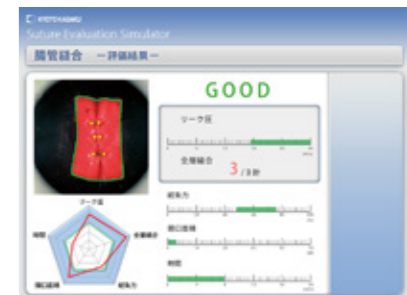
- Members should decide the turns and start using MW16 simulator
- Here are few example of rules:
 - Three simple knotted suture
 - 15 minutes time limit
 - Limitation of the number of needles.

Use of training boxes by vacant participants

-When other participants are using MW16 simulator, the vacant participants can use the training boxes on the side and deepen their understandings by practicing.

Even when the number of participants are high:

-The assessment by MW16 simulator can be possible afterwards when you have the record about intestinal tract sheet and time. By suturing the intestinal tract sheet in training box and measuring the time, you can use them as records of the contest.



How to design training courses

POINT Recognizing skills by objective assessment

As MW16 simulator assess doctor's skill based on the data taken from novices and experts, it helps doctors to reflect their procedural skills based upon the objective data. The five feedback criteria allow doctors to modify their weak point, and improve to higher levels.

POINT Design enjoyable training

This training was held in contest-style. Remember to build a challenging, but fun atmosphere throughout the contest. In this training, top scorers were displayed in a big screen (without showing their names), and ceremony was held after the contest.

POINT Tag-team should be made between different levels

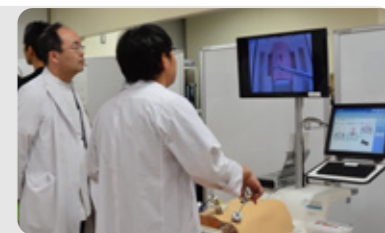
If residents are included in the participants, coaching inside group is possible by making tag-team between different levels of participants. The learners can deepen their understanding while the teacher can practice how to teach. If the session is held in contest-style. The top-scorer can be presented separately by the level of participants.

Utilizing feedbacks from MW16 simulator

Review Vacant time

Review in free time:
-The participants can review their procedures based upon the assessment and try once again.
-Using their own training sheet, the participants can take time for training bearing in mind their weak point.

Supervision of senior trainees to juniors;
In case there are senior and junior trainees in one team, the supervision of senior trainees can deepen understanding of both the senior and the junior.



Announcement of results 5 min

Announcement of top scorers/ sharing of their know-how

-The top-scorer and the assessment sheet, and the things the top-scorer kept in mind should be shared.
-Based on the assessment data, the participants should set their next goal and keep their training.