Competency of Utility for Magnifying Glass

‘Shall we try to suture the artificial vassals!’

Eiji Kobayashi, MD, PhD
Department of Organ Fabrication, Keio University School of Medicine, Japan
Introduction of International Society for Experimental Microsurgery (ISEM)

See you in Tianjin, China 2016
A Proposal Concept of ‘Translational ‘Microsurgery

Experimental Microsurgery covered world-wide area as a powerful tool for Translational Research.

Animal

Human

- Immunology
- Pharmacology
- Ischemia/Reperfusion
- Transplantation
- Microsurgical Devises
- Tissue/Organ Engineering
- Minimum Invasive Surgery

(Kobayashi E 2009)
Can you justify the experiment using living animals?

(Claude Bernard; 1813-1878)
A Proposal Concept of Two Way Approach

Human Trail

Classical Way

Patient

Large Exp Animals

Small Exp Animals

Veterinary Medicine

Companion Animals

A Proposal Way

(Kobayashi E 2009)
Japanese Chapter of ISEM (The East Branch)

• **Monthly One Day Training**
We will use dry lab models in basic skills. Ten meeting will be opened while we help to progress the skills of competent participants.

• By more than 80% of attendance in every year, the young veterinary surgeons will receive the certificate for a year.

• Recommendation to be a **member for ISEM**
We encourage that young veterinary surgeons will present their works in ISEM 2016 in China.

• This is **volunteer work**. We would like to donate some money for **Shelter Animals**.

(Ishii & Kobayashi 2014)
Introduction of the top translational researcher using human iPS cells for regenerative medicine

Prof Keiichi Fukuda
Keio University School of Medicine
Kaoru Endo  
Endo Dog & Cat Hospital

Yuuta Abe  
Keio University School of Medicine

Hidekazu Sekine  
Tokyo Women’s Medical University

Akinori Hirano  
Keio University School of Medicine
3 C Approach

教育を科学する
3 C Approach

- **Curriculum**: Teaching is driven by a written curriculum which is given to the students to guide their learning.

- **Competency**: After the teaching, learners are evaluated to see if they have acquired the desired competency.

- **Clinical outcomes**: Learners report their clinical experiences over the long term, to evaluate the value of the training in the clinical practice of medicine.
Proposal Educational System; 3 C

Certified physician

Student

Reliable & Safe Medical Skills

Curriculum Based Education

Competency Based Assessment

Clinical Outcomes

Positive spiral

Clinical Outcomes

Competency Based Assessment

Clinical Outcomes

Competency Based Assessment

Clinical Outcomes

Competency Based Assessment
A: Twist type anastomosis

B: Non-twist type anastomosis
Scientific Evaluation of the Interloped Suture in Rats

Dissected Abdominal Aorta at the site of anatomists

Time required for complete Anast (min)

Standard Deviation (SD) of the length between interloped points
Application (1) : Assessment of Immunosuppressive Drugs

**Application (2) :** Beating tubes for circulatory support

Ventricular Assist Device

(resected aorta)

wrapping around aorta

Fabrication and transplantation of cardiac tube

- Cardiomyocyte sheet
- Wrapped and layered
- Replacement of abdominal aorta

in vitro

6 layered
Histological comparison between cardiac tubes in the replacement and in the cavity

Aortic replacement

Abdominal cavity

175±26μm

80±30μm

* : p<0.05

Ao : aortic replacement
Cav : abdominal cavity
Today’s Training

Competency of Utility for Magnifying Glass

‘Shall we try to suture the artificial vassals!’
Materials & Methods

Groups: With or Without Magnifying Glass

Non-living animal: artificial vassals