LiSS System,
the Japan’s first non-medical private sector providing death investigation service

Prof. Morio Iino, MD, PhD 1)
Mitsuteru Ozawa, Radiographer 2)
Yukari Imagawa, Embalmer 3)
Kazuhiro Hanada, Chief 4)
Miyuki Haga, Secretary 5)
Tatsuo Wakatsuki, Consultant 5)
Ayumi Sugiyama, Representative Director 5)
Ken-ichiro Hashizume, Embalmer, President 3)
Nyokai Matsushima, Advisor 5)

1) Division of Legal Medicine, Tottori University School of Medicine, Yonago, Japan
2) Ai Center, Shinkiba, LiSS system, Tokyo, Japan
3) GSI Co., Ltd., Tokyo, Japan
4) LiSS Center Shinkiba, Liss system, Tokyo, Japan
5) Central Office, LiSS system (Life Support System), Tokyo, Japan
**Introduction**

**Company Profile**

- **Name:** NPO LiSS System
  - NPO stands for non-profit organization
  - LiSS System stands for **Living Support Service System**
  - Founded in Tokyo in 1993

- **Locations**
  - Headquater: Central Tokyo
  - Branches: 8 branches in Japan
  - LiSS Center: Shinkiba, Tokyo
  - **Ai Center Shinkiba: Shinkiba, Tokyo**

- **Number of the employees**
  - 75 employees

- **Services**
  - provides “End-of-life care” for the clients

- **Number of the clients**
  - 3,500
Ai Center is located on the ground floor of the LiSS Center
Introducing the presenter

Prof. Morio Iino
Tottori University, Yonago, Japan

- Board Certified Forensic Pathologist
- Founding member of the ISFRI
- Associate Editor of JOFRI
- Board member of the Japanese Society of Autopsy imaging (Ai)
- Councilor of the Japanese Society of Legal Medicine
- Consultant pathologist for the NPO LiSS System

Experiences in postmortem imaging

- Attended 1st Virtopsy Basic Course in 2006
- Attended 1st Virtopsy Advanced Course in 2010
- Overseas fellow at VIFM, Australia in 2008-2009
  - Supervisor: Dr. Chris O’Donnell
- Installed CT scanner to Osaka University in 2010
- Keynote speaker at ISFRI 2015 in Leicester
Introduction of the LiSS System

* **Background**
  * Family relationships in Japan have drastically changed over the past 20-30 years.
  * Since the late 1980's, some people would not rest in a traditional family grave since they thought their children would not be able to preserve it.
  * As a solution, Mr. Nyokai Matsushima, a former Buddhist monk, made a form of shared grave called “Moyai Monument” in Tokyo in 1990.
  * Next issue was who takes care of funerals besides their families.
  * The answer is... the deceased.
    * The funeral planned and done by the deceased himself/herself is needed.
Introduction

- The issues for funerals being done by the deceased
  - Legal issues
    - Solved by giving the deceased person “Supposed Human Rights”.

- The beginning of the LiSS System
  - End-of-life care
    - division of estate
    - funeral service
    - solving any legal issues after death

- Death is inevitable
  - Try to know “when” and “under what circumstances” the event has to take place
    - Asking the cause of death of the deceased to the doctors was unacceptable in 1990’s since it seems to be doubting the medical treatment
  - The answer is “Autopsy imaging”, the technique of postmortem imaging
Introduction

* Establishment of Ai Center Shinkiba
  * Installing CT scanner at the corner of the LiSS Center to provide a service for death investigation in April, 2014
  * Opens 24/7
  * Scanned 20 cases so far

* Equipment
  * CT scanner: Aquillion 16 (Toshiba, Japan)
  * Workstation: syngo. via (Simens, Germany)
  * Cloud server: provided by eSite HEALTHCARE, Japan

* Staff
  * One full-time organizer
  * One full-time radiographer
  * Other LiSS staffs for help

* Interpretation of the images (tele-radiology)
  * Referral radiologists and pathologists can interpret the images online
In October, 2015, the government remodeled the act to enforce a medical malpractice checking system.

When a patient unexpectedly died during/after the medical treatment, the hospital treated him/her has to report the case to the investigation center and has to investigate the cause/manner of death by themselves.

Under this system, the hospital has to investigate the case though they are not forced to perform autopsy.

- The postmortem imaging is a useful method for investigation.
- The hospitals would not scan the bodies at the hospitals.
- The Ai Center of the LiSS System received attention from Tokyo Medical Association which helps solving issues of malpractice.
To start the postmortem imaging services, LiSS System had a lecture series to educate their staff and other interested parties.

In September, 2015, they had a 2-day course for Ai education.

One of the invited lecturers was Prof. Morio Iino, Tottori University.

**Time table for the Autopsy imaging course (September, 2015)**

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<tr>
<th>Day 1</th>
<th>Day 2</th>
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<tr>
<td>Autopsy imaging and autopsy</td>
<td>What is Ai?</td>
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<td>Summary of Medical malpractice checking system 1</td>
<td>Basic concept of post mortem scanning</td>
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<td>Summary of Medical malpractice checking system 2</td>
<td>Autopsy imaging in forensic medicine</td>
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<td>Infection prevention in transporting bodies</td>
<td>Medical safety management at the hospital</td>
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<td>Legal issues of Autopsy imaging</td>
<td>How to treat the bodies 1</td>
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<td></td>
<td>How to treat the bodies 2</td>
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The LiSS System is not just one of the non-profit organizations. It has an academic part trying to absorb the latest information on death investigation.

Mr. Nyokai Matsushima is the person who makes every effort to understand the advanced way of death investigation.
Tours overseas to gain knowledge

- Tour in Australia in March, 2016
  - Visiting VIFM
  - A lecture at VIFM
  - Beautiful scenery in Melbourne with Dr. O’Donnell
  - Visiting funeral service company
  - A crematorium
Tours overseas to gain knowledge

* Tour in Amsterdam for ISFRI in May, 2016

Mr. Matsushima met Prof. Grabherr after attending the PMCTA workshop

Having Dutch beer
Invited forensic researchers to the LiSS System

* Prof. Silke Grabherr
  * Talk on MPMCTA (June, 2016)
* Dr. Kurt Nolte
  * Free discussion on death investigation in the US (March, 2017)
* Dr. Valentinus Yudi
  * Talk on funeral service in Indonesia (November, 2016)

Sponsored a congress

Forensic pathology and science symposium in Nagasaki (November, 2016)

Guest speakers: Prof. Dr. Hermann Vogel, Dr. Chris O’Donnell, Dr. Lars Ebert, Dr. Sookyoung Lee, Dr. Hideki Hyodoh
Mr. Matsushima would not stop seeking new successes in postmortem imaging.

LiSS System decided to purchase the Virtangio for better understanding the cause of death of their clients for the first time in Japan.

It was not easy to import the very first postmortem angiography device in Japan all the way from Europe.
Delivering the Virtangio

- LiSS System does not have many cases since they are not a medical or forensic institute.
- Another new idea came to Mr. Matsushima. Delivering the Virtangio!
- We would deliver the Virtangio anywhere in Japan along with an embalmer and a radiographer.
  - We delivered the machine to Kanagawa Dental Uni for the cases of Prof. Iwao Hasegawa.
- We have performed 5 cases of MPMCTA so far.
The embalming company GSI Co. Ltd.

- Mr. Hashizume is the president of the GSI which provides the services of embalming and grief care.
  - GSI stands for Grief Support International.
- Mr. Hashizume is the person who introduced the technique of embalming to Japan.
- One of the embalmers, Yukari Imagawa has been trained how to insert the catheter for the MPMCTA.

Ms. Imagawa, an embalmer has been trained how to insert the catheter.
LiSS System as a team

**LiSS System**

Nyokai Matsushima, Kazuhiro Hanada, Mitsuteru Ozawa

CT scanning (radiographer), Virtangio, Facility, Cloud Server, Delivery of Virtangio

**GSI Co. Ltd.**
Ken-ichiro Hashizume
Yukari Imagawa
angiography procedure (embalmer)

**Tottori University**
Morio Iino
Image interpreting (forensic pathologist)
Summary

* The LiSS System is an NPO which provides end-of-life care services.
* One of the services is postmortem CT scanning.
* It is the first death investigation service done by non-medical private sector in Japan.
* It now provides MPMCTA service as well after the hard way of importing Virtangio device from Switzerland.

* Prof. Iino, a consultant forensic pathologist is a skilled board certified pathologist who has 10 years of experience in postmortem imaging.
* He can give them a support in scanning and interpreting the images.

* The GSI is the oldest company for embalming services which has a good relationship with the LiSS System

* The LiSS System can work with Prof. Iino and GSI as a team in performing and studying MPMCTA cases in Japan.

* We’d like to join the TWGPAM (Technical Working Group Post mortem Angiography Methods) for better understanding of MPMCTA.
Thank you!
Thank you!