



出國報告（出國類別：參加國際會議）

參加 2012 年美國術中監測年會並進行 口頭報告

服務機關：台北榮總復健部
姓名職稱：神經復健科主任楊翠芬
派赴國家：美國
出國期間：2012/5/3—5/8
報告日期：2012/6/8

摘要

職於5月3日至5月8日前往美國鹽湖城參加2012年美國術中監測年會(American Society of Neurophysiological Monitoring)並進行口頭論文報告。為期兩天半的會議期間，每天早上 breakfast with the Experts，分別有在各領域的專家分享臨床經驗。5月4日上午的上課主題是 Evidence-based medicine，下午的上課主題是 Cranial nerve & PN IONM reserch，5月5日上午的上課主題是 Spine IONM research，下午的上課主題是 Brain IONM research。職的口頭報告安排在5月5日下午，報告時間共15分鐘，報告的主題是” Ultrasound guidance for localization of neck and trunk muscles during intraoperative neurophysiological monitoring” ，詳細報告近半年來我們使用超音波在術中監測的臨床應用，得到與會者很大的迴響。該報告內容已經寫成文章，向 Clinical Neurology and Neurosurgery 投稿，目前正在審查中。

關鍵字: 術中監測，超音波

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本文

一、 目的

前往美國鹽湖城參加為期兩天半的 2012 年美國術中監測年會(American Society of Neurophysiological Monitoring)，並進行口頭論文報告” Ultrasound guidance for localization of neck and trunk muscles during intraoperative neurophysiological monitoring”

二、 過程

職於 5 月 3 日傍晚搭機離開台灣，並於 5 月 4 日凌晨 2 點才抵達美國鹽湖城(因飛機嚴重誤點)，稍事休息後，當天早上 7 點開始參加為期兩天半的會議。為期兩天半的會議期間，早上 6:45 到 7:30am 大會安排了 breakfast with the Experts，分別有在各領域的專家跟學員分享臨床經驗，並可隨時發問及討論，獲益良多。5 月 4 日上午的上課主題是 Evidence-based medicine，討論近來及未來與術中監測相關的研究走向；5 月 4 日下午的上課主題是 Cranial nerve & PN IONM reserch，主講者鉅細靡遺的分享寶貴的臨床資訊及經驗；5 月 5 日上午的上課主題是 Spine IONM research，探討脊椎手術相關的術中監測方法；5 月 5 日下午的上課主題是 Brain IONM research，同樣的聽眾都感到耳目一新。最後一天上午則是安排 IONM team compete interactive session。另外前面兩天在 5:15 到 6:45pm 則有 Abstracts presentation，課程安排可說是非常實用及充實。我的口頭論文報告安排在 5 月 5 日下午，報告時間 10 分鐘，討論 5 分鐘，我報告的主題是” Ultrasound guidance for localization of neck and trunk muscles during intraoperative neurophysiological monitoring”，詳細報告近半年來我們使用超音波在術中監測的臨床應用，內容得到與會者很大的迴響，主持人表示我們的報告解答了他們長期以來在監測肋間肌(intercostal muscle)時遇到的困擾，因為事實上在我們之前從事術中監測者從未使用超音波協助進行術中監測。因此受到很大的鼓勵，所以回來後馬上寫成文章，向 Clinical Neurology and Neurosurgery 投稿，目前正在審查中。

三、 心得

國外術中監測已有20年以上的歷史，國內起步較慢，最近兩三年才比較有長足的進展，四月中本院神經醫學中心舉辦了一場”術中神經功能定位監測研討會”，可說是近兩年來本院進行術中監測的成果發表會，吸引了全台灣各大醫院的醫療團隊前來與會，可見術中監測這個技術是很有未來性的，為了提升手術的安全性，需求是會與日俱增的。能夠去國外參與會議，跟專家們學習技術，對未來我們持續從事術中監測有無比大的助益，將來希望能持續藉由參加相關會議增進有關的學養。

四、 建議事項

本院術中監測的機器及設備已使用3、4年，有些特殊技術因機器的限制目前無法使用，有必要添購新型機器以進行完整的全面監測(神經醫學中心已計畫添購)

從事術中監測的人員需要不斷的進修以具備足夠學養來進行此一具相當挑戰性的業務，同時須訓練更多人員以協助，希望院方能繼續支持。

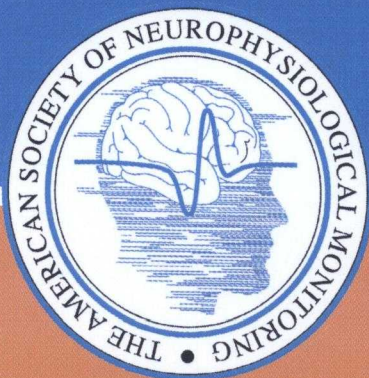
五、 附錄

1. 2012年美國術中監測年會行程表
2. 論文報告摘要

The American Society of Neurophysiological Monitoring presents

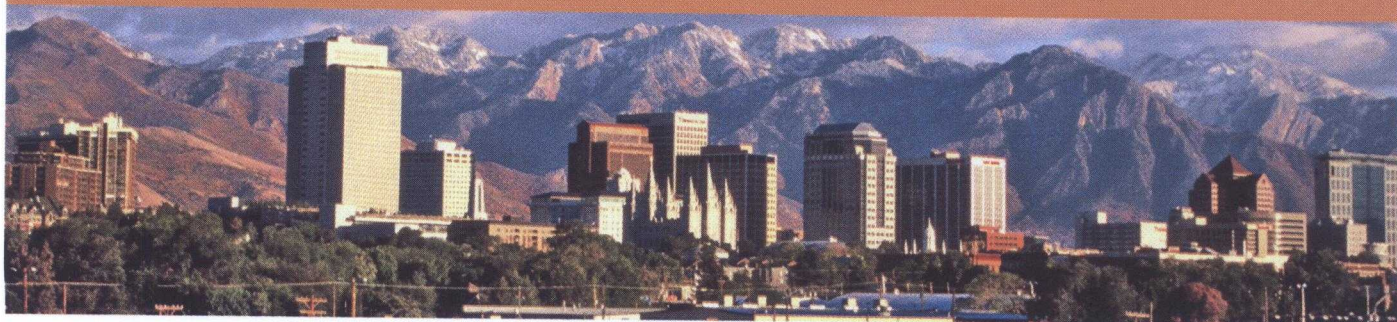
Research in the OR...

Current State of the Art and Future Frontiers



ASNM Annual Meeting
Grand America Hotel, Salt Lake City, Utah
Friday, May 4 - Sunday, May 6, **2012**

Register online at www.asnm.org



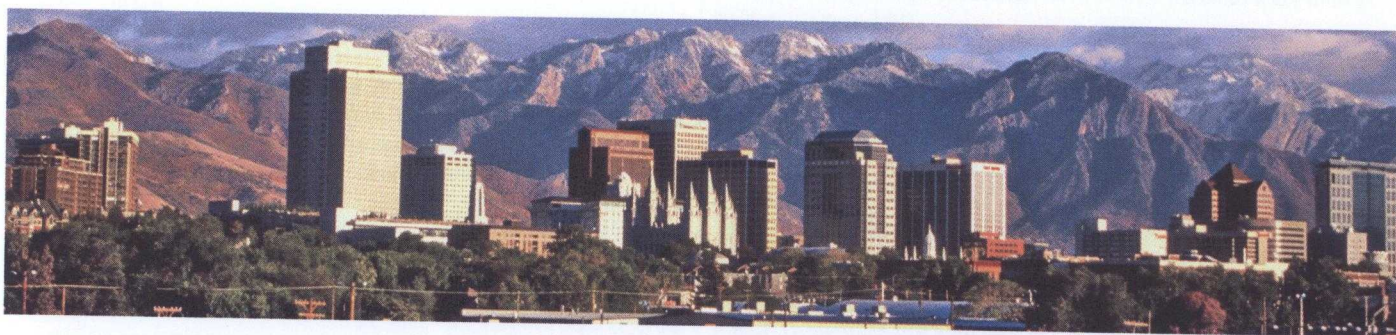
Research in the OR...

Current State of the Art and Future Frontiers

Identify and understand the latest validated and cutting edge methods.

See the methodological horizon – get a glimpse into the future.

Expand your IONM scientific literature library.



Grand America Hotel

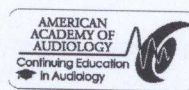
Location and Accommodations

ASNM has secured a block of rooms at the Grand America Hotel at the special rate of \$185 until April 18, 2012. Book your reservations online or by calling (800) 304-8696. Please identify yourself as being with ASNM at the time of the reservation to receive the special group rate.

Grand America Hotel
555 South Main Street, Salt Lake City, Utah 84111
(800) 304-8696

Room reservations at www.asnm.org/events.

This activity has been planned and implemented in accordance with the Essential Areas and policies of the Accreditation Council for Continuing Medical Education (ACCME) through the joint sponsorship of Interstate Postgraduate Medical Association and ASNM. IPMA is accredited by the ACCME to provide continuing medical education for physicians. The Interstate Postgraduate Medical Association designates this live activity for a maximum of **## AMA PRA Category 1 Credit(s)**[™]. Physicians should claim only the credit commensurate with the extent of their participation in the activity.



ASNM has applied to the American Academy of Audiology to offer Academy CEUs for this activity. Academy approval of this continuing education activity does not

imply endorsement of course content, specific products, or clinical procedures.



The American Society of Electroneurodiagnostic Technologists has granted ASET Continuing Education (ACE) credits (9.5 ACE credits for Day 1, 10.0 ACE credits for Day 2 and 5.0 ACE credits for Day 3) for this program. Such crediting, however, should not be construed by program participants as endorsement of any type of instruments or suppliers mentioned or involved in these presentations.



ASNM has applied to the Continuing Education Board of the American Speech-Language-Hearing Association (ASHA) to provide continuing education activities in speech-language pathology and audiology. ASHA CE Provider approval does not imply endorsement of course content, specific products, or clinical procedures.

Program

Thursday, May 3, 2012

7 a.m. - 5 p.m.

Venezia

Board Meeting

6 - 9 p.m.

Envoy

CNIM Board Prep

Rebecca Clark-Bash, R EEG/EP T, CNIM, CLTM, FASNM

6 - 9 p.m.

Savoy

ABNM Board Prep

Ronald Pearlman, PhD, CCC-A, FASNM, DABNM

5 - 8 p.m.

Early Registration

Friday, May 4, 2012

6:30 - 7:30 a.m.

Imperial Ballroom A

Continental Breakfast

6:45 - 7:30 a.m.

Imperial Ballroom C/D

Breakfast with the Experts

Third World IONM, James Watt, Jr

Electro Burn Demonstrations from ESU, Brett Netherton, MS, CNIM

New Notions in Remote Monitoring, Jack Hastings, MD

Depth of Anesthesia, Christoph Seubert, MD, PhD, DABNM

7:30 a.m.

Imperial Ballroom B

Welcome & Introduction / ASNM Updates

Bernard Allan Cohen, PhD, FASNM

EVIDENCE-BASED MEDICINE

Moderator: Christoph Seubert, MD, PhD, DABNM

Imperial Ballroom B

7:40 - 8 a.m.

An Outcomes-Based Future for ASNM:

The Promise of Evidence-Based Medicine

Bernard Allan Cohen, PhD, FASNM

8 - 8:55 a.m.

Surgical Perspective on IONM

The Achilles' Heels of Evidence-Based Medicine:

Re-appraisal of Pedicle Screw and TCMEP IONM

Stanley Skinner, MD

8:55 - 9:40 a.m.

Understanding the Prospective Study

Retrospective Analysis: Spine Surgery

Anthony Sestokas, PhD, DABNM, FASNM

9:40 - 10 a.m.

Imperial Ballroom A

Break with Exhibitors

10 - 10:45 a.m.

Understanding the Prospective Study

Prospective Analysis: Pedicle Screw Monitoring

David Morledge, PhD, CCC-A, DABNM, FASNM

10:45 - 11:30 a.m.

Primer

Levels of Evidence: How to Read the Literature, How to Think About Doing a Study

Matthew Eccher, MD, MSPH

11:30 a.m. - 12 p.m.

The Path Ahead

ASNM and EBM: Next Steps

H Louis Journée, MD, PhD

12 - 12:15 p.m.

Evidence-Based Medicine Panel Q&A

All morning speakers

12:15 - 1:30 p.m.

Lunch (on your own)

12:15 - 1:30 p.m.

Sussex

Advisory Council Meeting over Lunch

CrN & PNS IONM RESEARCH

Moderator: Brett Netherton, MS, CNIM

Imperial Ballroom B

1:30 - 2:10 p.m.

State of the Art Tools in Our Toolbox

Posterior Fossa Surgery: Cranial Nerve TcMEP Methods and Findings

Charles Dong, PhD

2:10 - 2:50 p.m.

The IOM Horizon

Nerves We Can and Cannot Monitor: A Review and a Hope

Leo Happel, PhD, FASNM

2:50 - 3:10 p.m.

Imperial Ballroom A

Break with Exhibitors

3:10 - 3:45 p.m.

Cutting Edge Research

MEP Guidelines Introduction I

David MacDonald, MD

3:45 - 4:20 p.m.

Cutting Edge Research

MEP Guidelines Introduction II

David MacDonald, MD

4:20 - 4:55 p.m.

Technical Tips: Sharpening the Tools

Bulbocavernosus Reflex: Methodology and Application

Justin McLoughlin, MS, DABNM, CNIM

4:55 - 5:15 p.m.

CrN & PNS IONM Research Panel Q&A

All Afternoon Speakers

5:15 - 6:15 p.m.

Abstracts & Posters

H Louis Journée, MD, PhD

Lawrence Wierzbowski, AuD, DABNM

6:15 p.m.

Closing Comments

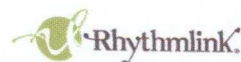
Bernard Allan Cohen, PhD, FASNM

6:30 - 8 p.m.

Networking Social

Imperial Ballroom A

Thank You to our Showcase Sponsors



Program

Saturday, May 5, 2012

6:30 - 7:30 a.m.

Imperial Ballroom A

Continental Breakfast

6:45 - 7:30 a.m.

Imperial Ballroom C/D

Breakfast with the Experts

MEP Methodology

H Louis Journée, MD, PhD

Optimized Instrumentation Layout

Brett Netherton, MS, CNIM

Pedicle Screws

Miriam Donohue, BS

Bulbocavernosus Reflex and Cremaster Monitoring

Stanley Skinner, MD

7:30 a.m.

Welcome & Introduction / ASNM updates

Antoun Koht, MD

SPINE IONM RESEARCH

Moderator: *John McAuliffe, III, MD, MBA*

Imperial Ballroom B

7:40 - 8:20 a.m.

State of the Art Tools in Our Toolbox

The Trinity of Neuromonitoring in Spine

Mingwei Li, MD, DABNM

8:20 - 9 a.m.

The IOM Horizon


Intramedullary Spinal Cord Lesions: What We Are (and Should Be) Doing

Francesco Sala, MD

9 - 9:20 a.m.

Imperial Ballroom A

Break with Exhibitors

sponsored by  Reliant Billing

9:20 - 9:55 a.m.

Digitimer Lecture

Cutting Edge Research

MEP Alarm Criteria: Current Status, A New Way to Think About It

John McAuliffe, III, MD, MBA

9:55 - 10:30 a.m.

Cutting Edge Research

SEPs: Back to the Future

Ronald Emerson, MD

10:30 - 11:05 a.m.

Technical Tips: Sharpening the Tools

Spine IONM: Tools to Optimize Your Data

Cathy Boldery, R EEG/EP T, CNIM, R PSG T, CCT

11:05 a.m. - 12 p.m.

Presidential Lecture

Jeremy Howick, PhD

12 - 12:15 p.m.

Spine IONM Panel Q&A

All Morning Speakers

12:15 - 1:30 p.m.

Society Membership and Meeting Luncheon

Imperial Ballroom C/D

ASNM members are invited to the annual business meeting. Lunch will be provided.

BRAIN IONM RESEARCH

Moderator: *Jack Hastings, MD*

Imperial Ballroom A

1:30 - 2:10 p.m.

State of the Art Tools in Our Toolbox

Vestibular Schwannoma: Tools in our Toolbox

William Martin, PhD, FASNMM

2:10 - 2:50 p.m.

The IOM Horizon

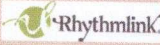
Within and Below the 4th Ventricular Floor: What We Can and Cannot Do (Yet)

Francesco Sala, MD

2:50 - 3:10 p.m.

Imperial Ballroom A

Break with Exhibitors

sponsored by  RhythmLink

3:10 - 3:45 p.m.

Cutting Edge Research

IONM and the Brain: Beyond the Next Five Years

Jay Shils, PhD, DABNM, FASNMM

3:45 - 4:20 p.m.

Cutting Edge Research

Independent Component Analysis (ICA)

Jeffrey Gertsch, MD

4:20 - 4:55 p.m.

Technical Tips: Sharpening the Tools

Brain IONM: Tools to Optimize Your Data

Josh Mergos, MS, CNIM

4:55 - 5:15 p.m.

Brain IONM Panel Q&A

All Afternoon Speakers

5:15 - 6:30 p.m.

Abstracts & Posters

H Louis Journée, MD, PhD

Lawrence Wierzbowski, AuD, DABNM

6:30 p.m.

Closing Comments

Antoun Koht, MD

7 - 9 p.m.

Networking Reception at Gracie's (offsite)

326 South West Temple

PRESIDENTIAL LECTURER



Featuring *Jeremy Howick, PhD*

Centre for Evidence-Based Medicine

Dr Howick is a MRC/ESRC funded postdoctoral fellow at the CEBM. He is the author of *The Philosophy of Evidence-Based Medicine*. His research interests include the nature of 'placebos' and whether their use is ethical in clinical practice and clinical trials, the role of 'mechanistic reasoning' as evidence for efficacy and effectiveness for medical and social policy interventions. He is also a lecturer in the Science and Technology Studies department at University College London, where he runs an intercalated degree for medical students. He is an experienced teacher and enjoys teaching, lecturing, and mentoring students of all levels.

Program

Sunday, May 6, 2012

Moderator: Lawrence Wierzbowski, AuD, DABNM

6:30 - 7:30 a.m.

Imperial Ballroom A

Continental Breakfast

7 - 7:45 a.m.

Imperial Ballroom C/D

Breakfast with the Experts

Policy and Procedure for Lab Accreditation

Clare Gale, R EEG/EP T, CNIM

Engaging Prospective Surgeons

Patricia Warf, RN, MS, CNIM

Errors in IONM

Jack Kartush, MD, FASNM

Cortical Sensory and Motor Mapping

Faisal Jahangiri, MD, CNIM, DABNM

7:45 a.m.

Imperial Ballroom B

Welcome & Introduction / ASNM updates

Antoun Koht, MD

7:55 - 8:50 a.m.

IONM Morning Edition: Guidelines, Reimbursement, Coding

Bernard Allan Cohen, PhD, FASNM

Marc Nuwer, MD, PhD, FASNM

8:55 - 9:50 a.m.

Research Wrap-up

Robert Holdefer, PhD, DABNM

Craig Crookston, DPT, CNIM

Erik Kobylarz, MD, PhD

Kevin Orndorff

9:50 - 10:10 a.m.

Imperial Ballroom A

Break with Exhibitors



sponsored by Rochester Electro-Medical

10:10 - 11:40 a.m.

IONM Team Compete Interactive Session

Host: Leo Happel, PhD, FASNM

Judges: Jack M Kartush, MD, FASNM; Stanley Skinner, MD;

Tod Sloan, MD, MBA, PhD, FASNM

Team A

John McAuliffe, III, MD, MBA

Clare Gale, R EEG/EP T, CNIM

Justin McLoughlin, MS, DABNM, CNIM

H Louis Journée, MD, PhD

Jack Hastings, MD

Team B

Christoph Seubert, MD, PhD, DABNM

Matt Cotton, MS, CNIM

Cathy Boldery, R EEG/EP T, CNIM, R PSG T, CCT

Ronald Emerson, MD

Jay Shils, PhD, DABNM, FASNM

11:40 a.m. - 12:10 p.m.

Call to Action

Bernard Allan Cohen, PhD, FASNM

Stanley Skinner, MD

12:10

Closing Comments

Antoun Koht, MD

Information

Registration

Registration fees include participation in and electronic materials for all session lectures, continental breakfast and breaks, and a networking reception.

Register online at www.asnm.org/events.

Registration Fees	Thru April 25	After April 25
ASNM members	\$595	\$645
Nonmembers	\$795	\$845
One-day registration	\$350	
Student registration	\$300	
Guest ticket for networking reception	\$100	
ABNM Board Prep	\$150	\$175
CNIM Board Prep	\$100	\$125
Printed handouts with registration	\$200	
Printed handouts without registration	\$300	

Members save \$200! Join today for just \$150.

Call for Abstracts

The ASNM Program Committee announces the call for abstracts for the 2012 Annual Meeting in Salt Lake City, Utah. Members of The Society, students and professionals in related disciplines are encouraged to submit proposals. Abstracts of less than 3,500 characters on the event topics are invited and should be submitted according to the guidelines available www.asnm.org to info@asnm.org before March 16, 2012. Abstract presenters will be notified of acceptance of their abstract by March 30, 2012.

Mary Stecker Memorial Grant

Over the past years the Mary Stecker Memorial Grant has offered awards to ASNM members new to the profession either still in training or just out of training to cover some of the travel expenses to the Annual Meeting. To apply for these awards, send your current curriculum vitae and a one to two paragraph description of your present status in the IONM community and why you would like to attend the Annual Meeting to info@asnm.org. For questions or additional information on this grant, contact the ASNM office.

Exhibitors

Booth registration is \$1,500 and includes two registrations. Sponsorships, program advertisements, and web advertising are also available. For more information, see the exhibitor prospectus at www.asnm.org.

Networking Reception

All registrants and exhibitors are invited to attend a networking reception Saturday, May 5, 7 to 9 p.m. Guest tickets are available for an additional fee. Location: Gracie's, 326 South West Temple, Salt Lake City, www.graciesslc.com.



Localization of intercostal muscles and cricothyroid muscle under ultrasound guidance during intraoperative monitoring

When doing pedicle screw stimulation for T2-6 levels, needle electrode needs to be placed at relevant Intercostal muscles so as to record compound muscle action potential (CMAP). When mapping the 10th cranial nerve during surgery of skull base tumor, cricothyroid muscle can be used to record CMAP as well. Both of the intercostals muscle and cricothyroid muscle are not superficially located and do carry certain risk if needles are inserted too deep, which will associate with increased morbidity related to intraoperative monitoring (IOM) itself. We use musculoskeletal ultrasonography (US) successfully to visualize and locate these two muscles during preparation of IOM. B-mode of US scan with high frequency transducer of at least 10 MHz is used for better signal resolution and subdermal EEG needle used for CMAP recording. We insert recording needles either under direct ultrasound guidance or indirectly guided by pre-collected data including the precise puncture site of needle and preferred depth of needle tip within safety margin. Clinical use of US during IOM is simple, non-invasive, and available in most of the operation room. It provides valuable information to monitorist when dealing with intercostal and cricothyroid muscles and will certainly increase accuracy of monitoring and safety of surgical procedures as well.

¹TFY, MD, tsuifenyang1@gmail.com (presenter)

¹JCW, MD, jcwang0726@gmail.com

²HJC, MD, hjchiou@vghtpe.gov.tw

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