

Is “See One, Do One, Teach One” still relevant in Regional Anesthesia?

Colin J.L. McCartney
MBChB PhD FCARCSI FRCA FRCPC
Professor and Chair,
Department of Anesthesiology and
Pain Medicine
University of Ottawa
Ontario, Canada
@colinjmccartney

See one, do one, teach one



"Remember the heirarchy of competence –
see one, do one, teach one, become a regulator."

Summary

- Should we continue to train anaesthetists in regional anaesthesia?
- Where have we been with RA training?
- Where are we now?
- Where should we be going?

Is Regional Anaesthesia still a valid skill?

- “Big Outcomes” still fail to demonstrate benefit of regional anaesthesia
- Regional anaesthesia only one part of multimodal analgesic technique
- Minimal support from surgical and anaesthesia colleagues
- Minimal support for regional anaesthesia infrastructure

Differences in Short-Term Complications Between Spinal and General Anesthesia for Primary Total Knee Arthroplasty

Andrew J. Pugely, MD, Christopher T. Martin, MD, Yubo Gao, PhD, Sergio Mendoza-Lattes, MD, and John J. Callaghan, MD

Investigation performed at the University of Iowa Hospitals and Clinics, Iowa City, Iowa

Results: The database search identified 14,052 cases of primary total knee arthroplasty; 6030 (42.9%) were performed with the patient under spinal anesthesia and 8022 (57.1%) were performed with the patient under general anesthesia. The spinal anesthesia group had a lower unadjusted frequency of superficial wound infections (0.68% versus 0.92%; $p = 0.0003$), blood transfusions (5.02% versus 6.07%; $p = 0.0086$), and overall complications (10.72% versus 12.34%; $p = 0.0032$). The length of surgery (ninety-six versus 100 minutes; $p < 0.0001$) and the length of hospital stay (3.45 versus 3.77 days; $p < 0.0001$) were shorter in the spinal anesthesia group. After adjustment for potential confounders, the overall likelihood of complications was significantly higher in association with general anesthesia (odds ratio, 1.129; 95% confidence interval, 1.004 to 1.269). Patients with the highest number of preoperative comorbidities, as defined by propensity score-matched quintiles, demonstrated a significant difference between the groups with regard to the short-term complication rate (11.63% versus 15.28%; $p = 0.0152$). Age, female sex, black race, elevated creatinine, American Society of Anesthesiologists class, operative time, and anesthetic choice were all independent risk factors of short-term complication after total knee arthroplasty.

Is RA still a valid skill?

- Good pain management still a very worthy aim
- Good pain control a valid component to facilitate rehabilitation
- Regional anaesthesia remains a vital component for postoperative pain control
- Need better training and infrastructure to support best practice

Postoperative Pain Experience: Results from a National Survey Suggest Postoperative Pain Continues to Be Undermanaged

Jeffrey L. Apfelbaum, MD*, Connie Chen, PharmD†, Shilpa S. Mehta, PharmD†, and Tong J. Gan, MD‡

*Department of Anesthesia and Critical Care, The University Chicago Hospitals, Chicago, Illinois; †Pharmacia Corp., Skokie, Illinois; and ‡Department of Anesthesiology, Duke University Medical Center, Durham, North Carolina

Table 2. Patient Concerns Before Undergoing Surgery

Concern ^a	Inpatient (n = 129)	Outpatient (n = 121)	Total (n = 250)
Pain after surgery	57%	61%	59%
Whether surgery would improve condition	47%	55%	51%
Full recovery from surgery	50%	41%	46%
Pain during surgery	36%	30%	33%
Treatment by health care professionals	32%	27%	30%
Don't know/refused	19%	12%	16%

^a Patients could choose more than one concern.

Regional Anesthesia Reduces Pain

Regional Analgesia for Postoperative Pain: Then & Now

Spencer S. Liu, MD

After-Pain Following the Use of Conductive Anesthesia

Ralph H. Fouser, D.D.S., and S.D. Salem

Anesthesia and Analgesia October 1922: Vol. 1, Pp. 75–78

Then Conductive anesthesia has the distinction of being one of the most important factors in the development of the present high state of perfection of our modern methods of dental practice, but there is still much to be desired, which will be developed with our ever-increasing experience. Of the many methods and fads of modern dentistry, conductive anesthesia has held to an ever-increasing popularity especially when its use rests upon the scientific basis with which it must be employed to insure the greatest degree of success. Nearly all of the professions

have had access to a knowledge of conductive anesthesia. The technique is mastered with study and experience, but there is one feature of this method of anesthesia that is a most important one in our complete success, and it is one that has many times been neglected, but often has given us serious concern, *e.g., the pain following the operation, which many times may be prevented with a little more study and care in our use of this method of anesthesia, as the successful termination of local anesthesia is not only a complete anesthesia but the elimination of the after-pain to as great extent as possible.*

Is RA still a valid skill?

Begin forwarded message:

From: C _____

Date: June 28, 2015 at 3:00:57 PM EDT

To: "cmccartney@toh.on.ca" <cmccartney@toh.on.ca>

(

Subject: Results on Femoral nerve block for knee replacement

Hi Dr McCartney

Attached is my report on the use of the femoral nerve block. My experience with it was fantastic as I had minimal or no pain for the four days I used it. I feel very fortunate to be able to participate in this study and really hope others can benefit from this fantastic pain management tool.

Please do not hesitate to call me if you have further questions. We also kept track of all medications taken and the time taken if that would be of use to you.

Thank you so much
Lorraine (

Summary

- Should we continue to train anaesthetists in regional anaesthesia?
- Where have we been with RA training?
- Where are we now?
- Where should we be going?

Summary

- Should we continue to train anaesthetists in regional anaesthesia?
- Where have we been with RA training?
- Where are we now?
- Where should we be going?

Original Article

Are Anesthesia Residency Programs Failing Regional Anesthesia? The Past, Present, and Future

DAN J. KOPACZ, M.D.*

L. DONALD BRIDENBAUGH, M.D.**

Original Article

Are Anesthesia Residency Programs Failing Regional Anesthesia? The Past, Present, and Future

DAN J. KOPACZ, M.D.*

L. DONALD BRIDENBAUGH, M.D.**

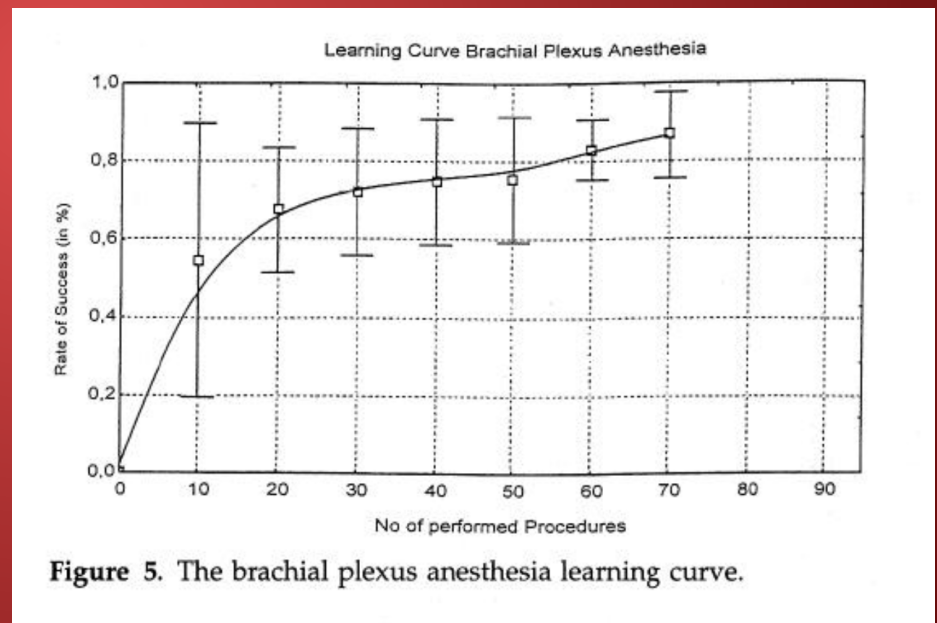
- Regional anaesthesia used in 29.8% cases
- Wide disparity in use
- Training based on case exposure alone
- Training based on quantitative factors alone

Learning Manual Skills in Anesthesiology: Is There a Recommended Number of Cases for Anesthetic Procedures?

Christoph Konrad, MD, Guido Schüpfer, MD, MBA HSG, Markus Wietlisbach, MD, and Helmut Gerber, MD, PhD

Institute of Anesthesiology, Kantonsspital, Lucerne, Switzerland

- Success: adequate technical performance
- Max 3 attempts or 10 mins only



▽ Editorial

Regional Training Circa 2000: What's Really New

Drs. Kopacz and Neal are continuing the Seattle and Virginia Mason Medical Center tradition of reporting on the use of regional anesthesia during American residency training.¹ They have provided us with a broader picture of regional anesthesia training for the year 2000 than was possible with survey results obtained 10 and 20 years earlier.^{2,3} The willingness of the American College of Graduate Medical Education (ACGME) to share these data should be recognized by all interested in resident education as a positive step. Far too often our varied educational and patient-care accrediting bodies are criticized for their oversight role. As our personal experience increases with the ACGME (D.L.B. as a member of the residency review committee for anesthesiology) and reflecting on the Kopacz and Neal report, both experiences validate the very real focus of improving residency education as a primary mission of the ACGME.

That said, what has really changed in the last 20 years regarding regional anesthesia training? At first blush, it seems academic programs are improving in providing regional anesthesia training: there is a nearly 30% frequency of regional anesthesia use for all anesthetics during training; the variability between regional anesthesia use in programs is decreasing, which was a particular issue in the 1980 survey. Yet it seems to us that what we have really accomplished during this interval is to more frequently use epidural anesthesia and analgesia for our surgical patients. The use of epidural anesthesia and analgesia is only one aspect of comprehensive regional anesthesia training.

The 2000 data strongly suggest we are still doing an inadequate job of teaching peripheral nerve blocks to our physician trainees. It appears only about half of our

▽ Editorial

Regional Training Circa 2000: What's Really New

Drs. Kopacz and Neal are continuing the Seattle and Virginia Mason Medical Center tradition of reporting on the use of regional anesthesia during American residency training.¹ They have provided us with a broader picture of regional anesthesia training for the year 2000 than was possible with the results obtained 10 and 20 years earlier.^{2,3} The willingness of the American College of Graduate Medical Education (ACGME) to share these data should be recognized by all interested in resident education as a positive step. Far too often our varied educational and patient-care accrediting bodies are criticized for their conservatism. As our author explains in his discussion of the ACGME (as a member of the residency review committee for anesthesiology) and reflecting on the Kopacz and Neal report, both experiences validate the very real focus of improving resident education as a primary mission of the ACGME.

That said, what has really changed in the last 20 years regarding regional anesthesia training? At first blush, it seems academic programs are improving in providing regional anesthesia training, the mean annual 100% frequency of regional anesthesia use for all anesthetics during training; the variability between regional anesthesia use in programs is decreasing, which was a particular issue in the 1980 survey. Yet it seems to us that what we have really accomplished during this interval is to more frequently use epidural anesthesia and analgesia for our surgical patients. The use of epidural anesthesia and analgesia is only one aspect of comprehensive regional anesthesia training.

The 2000 data strongly suggest we are still doing an inadequate job of teaching peripheral nerve blocks to our physician trainees. It appears only about half of our

- More consistency in quality in training programs
- Not enough numbers of procedures to achieve quantitative goals
- Simulation may hold promise

Summary

- Should we continue to train anaesthetists in regional anaesthesia?
- Where have we been with RA training?
- **Where are we now?**
- Where should we be going?

Where are we now?

- Training in RA is still time-based and very ad-hoc in most centres
- Less variation in exposure compared to 20 years ago
- Training is still based on quantitative models and not based on competence
- Training on patients remains central
- Regional anaesthesia training optional compared to, for example, difficult airway?



ROYAL COLLEGE
OF PHYSICIANS AND SURGEONS OF CANADA
COLLÈGE ROYAL
DES MÉDECINS ET CHIRURGIENS DU CANADA

royalcollege.ca • collegeroyal.ca

NATIONAL CURRICULUM FOR CANADIAN ANESTHESIOLOGY RESIDENCY

First Edition
June 2014

Edited by Dr. Mark Levine MD, FRCPC, Dr. Patti Murphy BScN, MD, FRCPC, Jennifer Stewart, MHS and David Pierce

**Contributors: ASSOCIATION OF CANADIAN UNIVERSITY DEPARTMENTS OF
ANESTHESIA***

- 27.7 Demonstrate knowledge of basic surface anatomy & palpable landmarks and the dermatomal & peripheral nerve distribution as applicable to each specific block
- 27.8 Describe site-specific equipment; indications; contraindications & drug selection for each block
 - 27.8.1 Neuraxial Blocks
 - 27.8.1.1 Spinal – single shot midline and paramedian
 - 27.8.1.2 Epidural
 - 27.8.1.2.1 T1-4
 - 27.8.1.2.2 T4-8
 - 27.8.1.2.3 T8-L-5
 - 27.8.1.2.4 Caudal
 - 27.8.2 Upper Extremity Blocks
 - 27.8.2.1 Interscalene
 - 27.8.2.2 Supraclavicular
 - 27.8.2.3 Infraclavicular
 - 27.8.2.4 Axillary
 - 27.8.2.5 At the elbow
 - 27.8.2.5.1 Median nerve
 - 27.8.2.5.2 Musculocutaneous nerve

CCT in Anaesthetics

Annex D - Higher Level Training

*Edition 2
August 2010
Version 1.6*

The Royal College of
Anaesthetists



Knowledge

Competence	Description	Assessment Methods	GMP
RA_HK_01	Discusses the principles, practice and complications of continuous catheter techniques for peripheral nerve blocks	A,C	1,2
RA_HK_02	Discusses the principles, practice and complications of the use of continuous spinal anaesthetic blockade	A,C	1,
RA_HK_03	Discusses the principles of the use of ultra sound for guiding nerve/plexus blocks and the insertion of catheters including, but not exclusively: Explaining the mechanisms by which hyperechoic, hypoechoic and anechoic images are obtained Explaining the difference and uses of 'B' mode [bright] and 'M' mode [Motion] ultrasound	A,C	1,

Skills

D-25

Competence	Description	Assessment method	GMP
RA_HS_01	Demonstrates the ability to develop a peri-operative management plan and perform safely and effectively a number of the following blocks under distant supervision using either/or peripheral nerve stimulation or ultrasound guidance [those marked with an asterisk are considered essential, the remainder are optional]: <ul style="list-style-type: none"> • Peripheral nerve blocks [e.g. femoral nerve]* • Brachial plexus* • Deep cervical plexus blocks • Supra and infra clavicular blocks • Intercostal nerve blocks • Thoracic epidural anaesthesia* • Lumbar plexus blocks • Sciatic blocks • 	A,D	1,2,3,
RA_HS_02	Demonstrates clinically relevant sonoanatomy of the brachial & lumbosacral plexus [upper and lower limb] with reference to performing recommended regional anaesthetic techniques	A,D	1,2
RA_HS_03	Can demonstrate local anaesthetic injection and circumferential spread around the intended nerve / plexus	A,D	1
RA_HS_04	Demonstrates correct needling technique using either an in or out of plane approach with ultrasound [Cross ref vascular and intensive care]	A,D	1

Problems in current education

- Numbers of blocks to learn
- Failure to use independent learning prior to practice
- Assumption that a theoretical exam implies competence

Training Programs

- How many peripheral nerve blocks would be achieved during training?
- <10
- 10-40
- >40

Training Programs

- How many brachial plexus blocks would be achieved during training?
- <10
- 10-40
- >40

Training Programs

- Do you use simulation during training?
- A: Low fidelity bench simulation
- B: High fidelity simulation
- C: Simulation with regional anaesthesia crises

Training Programs

- Do you test competence in regional anaesthesia prior to completion of training?

Variability in practice

- In your hospital can you guarantee the same regional technique for a patient after hours that is provided during elective hours?

Summary

- Should we continue to train anaesthetists in regional anaesthesia?
- Where have we been with RA training?
- **Where are we now?**
- Where should we be going?

Survey of the Utilization of Regional and General Anesthesia in a Tertiary Teaching Hospital

Marie N. Hanna, MD,* Maggie A. Jeffries, MD,† Sayeh Hamzehzadeh, MD,* Jeffrey M. Richman, MD,*
Patricia M. Veloso, MD,* Lyndsey Cox, MD,* and Christopher L. Wu, MD*

TABLE 1. Types of Surgical Procedures

Type of Procedure	No. Cases	RA Used	GA Only	Reasons for Not Choosing RA			
				Surgeon Related	Anesthesiology Related	Patient Refusal	Medical Contraindication
Abdominal	718 (31)	143 (20)	575 (80)	215/575 (37)	262/575 (46)	56/575 (10)	42/575 (7)
Orthopedic	587 (26)	326 (56)	261 (44)	57/261 (22)	56/261 (21)	37/261 (14)	111/261 (43)
Gynecologic	369 (16)	149 (40)	220 (60)	48/220 (22)	107/220 (49)	45/220 (20)	20/220 (9)
Plastic surgery	48 (2)	9 (19)	39 (81)	17/39 (43)	13/39 (33)	6/39 (16)	3/39 (8)
Thoracic	191 (8)	136 (71)	55 (29)	2/55 (4)	25/55 (45)	13/55 (24)	15/55 (27)
Urological	380 (17)	74 (20)	306 (80)	154/306 (50)	123/306 (40)	17/306 (6)	12/306 (4)
Others	8 (0.3)	2 (25)	6 (75)	6/6 (100)	0/6 (0)	0/6 (0)	0/6 (0)
Total	2301	839 (36)	1462 (64)	499/1462 (34)	586/1462 (40)	174/1462 (12)	203/1462 (14)

Values are presented as no. (%).

RA, regional anesthesia; GA, general anesthesia.

Survey of the Utilization of Regional and General Anesthesia in a Tertiary Teaching Hospital

Marie N. Hanna, MD, Maggie A. Jeffries, MD,† Sayeh Hamzehzadeh, MD,* Jeffrey M. Richman, MD,* Patricia M. Veloso, MD,* Lyndsey Cox, MD,* and Christopher L. Wu, MD**

- Why do anaesthetists refuse to perform regional anaesthesia?
- Why do surgeons refuse regional anaesthesia procedures?
- Training and training

Relationship of complication rate to number of blocks performed

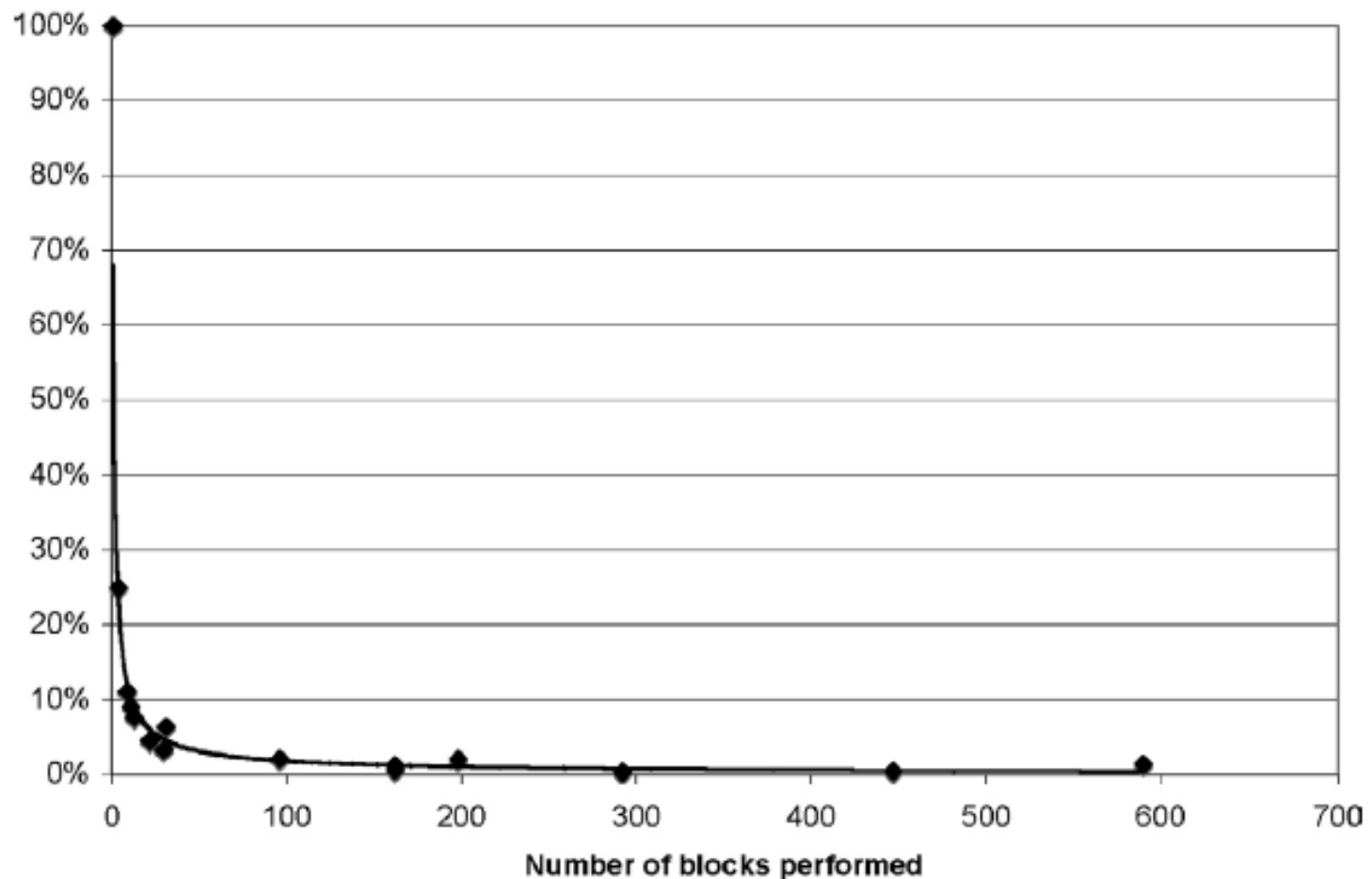


Figure 1 The complication rate is strongly correlated with the number of blocks performed. The relationship is well approximated by the following formula: $\text{Complication rate} = 0.68 \times (\text{No. of blocks performed})^{-0.7878}$. This formula correlated with the data at $R^2 = 0.8994$.

How to be an expert



Where are we now?

- RA still a niche subspecialty
- Except for neuraxial techniques training based on patient exposure, faculty expertise and interest*
- Wide geographical variation*
- Training still based on quantitative methods (with inadequate numbers)
- Curricula unrealistic in aims?
- Use of simulation??

Summary

- Should we continue to train anaesthetists in regional anaesthesia?
- Where have we been with RA training?
- Where are we now?
- Where should we be going?

Where should we go?

- Structured training: competence-based + simulation tested
- Levels of training: Expect a basic and limited standard of demonstrated competence of all on completion of training?
- Standard should be easily maintained in practice
- Regional anaesthesia skills not optional

EDITORIALS

Competency-based medical education: Its time has arrived

Mark F. Levine, MBBCh • George Shorten, MD, PhD

- First CBME anesthesia training program in Canada at uOttawa
- RA is a core rotation: minimum 40 PNBs
- OSCORA for assessment for each block
- Core learning cases
- Completion of EPAs and milestones

EDITORIALS

Competency-based medical education: Its time has arrived

Mark F. Levine, MBBCh • George Shorten, MD, PhD

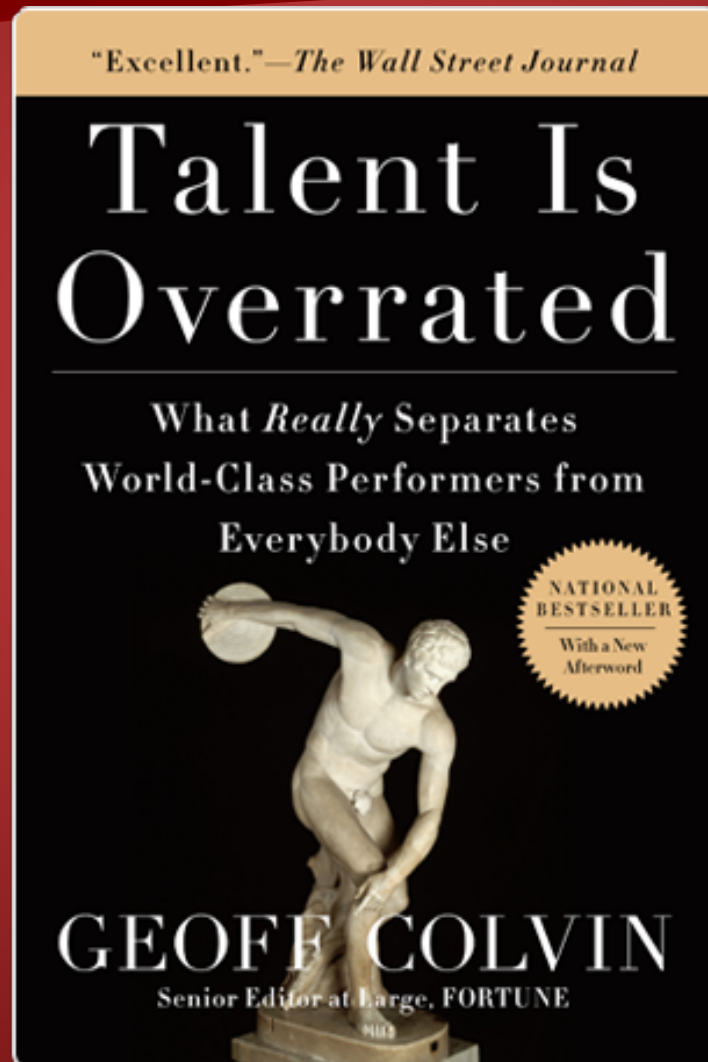
■ Limitations:

- No test of practical competency
- No test of skill retention
- Trying to teach too much?

Simulation in regional anaesthesia education

- Much supportive evidence from other specialties
- Currently absence of evidence for regional anaesthesia
- Need further studies delineating type, amount and frequency of simulation

Does deliberate practice improve results?



Ultrasound-Guided Regional Anesthesia Performance in the Early Learning Period

Effect of Simulation Training

Ahtsham Uddin Niazi, FRCPC, Nidhi Haldipur, BSc, Arun G. Prasad, FRCPC, and Vincent W. Chan, FRCPC

- 20 2nd year anesthesia residents
- No US experience
- 2 groups: Gp1 Standard training; Gp2 1 hour training on low fidelity model
- Both gps started regional rotation
- Success/Failure of blocks assessed

Ultrasound-Guided Regional Anesthesia Performance in the Early Learning Period

Effect of Simulation Training

Ahtsham Uddin Niazi, FRCPC, Nidhi Haldipur, BSc, Arun G. Prasad, FRCPC, and Vincent W. Chan, FRCPC

- Success: Block performed within 15 minutes and suitable for surgery without rescue blocks

Ultrasound-Guided Regional Anesthesia Performance in the Early Learning Period

Effect of Simulation Training

Ahtsham Uddin Niazi, FRCPC, Nidhi Haldipur, BSc, Arun G. Prasad, FRCPC, and Vincent W. Chan, FRCPC

- Conventional group 98 successful blocks, and the simulation group had 144 (51.3% vs 64%; $P = 0.016$).
- CUSUM: Conventional group 40% achieved proficiency, Simulation group, 80% proficiency ($P = 0.0849$)

Research Article

Simulation-Based Mastery Learning with Deliberate Practice Improves Clinical Performance in Spinal Anesthesia

**Ankeet D. Udani,¹ Alex Macario,^{1,2} Kiruthiga Nandagopal,³
Maria A. Tanaka,¹ and Pedro P. Tanaka¹**

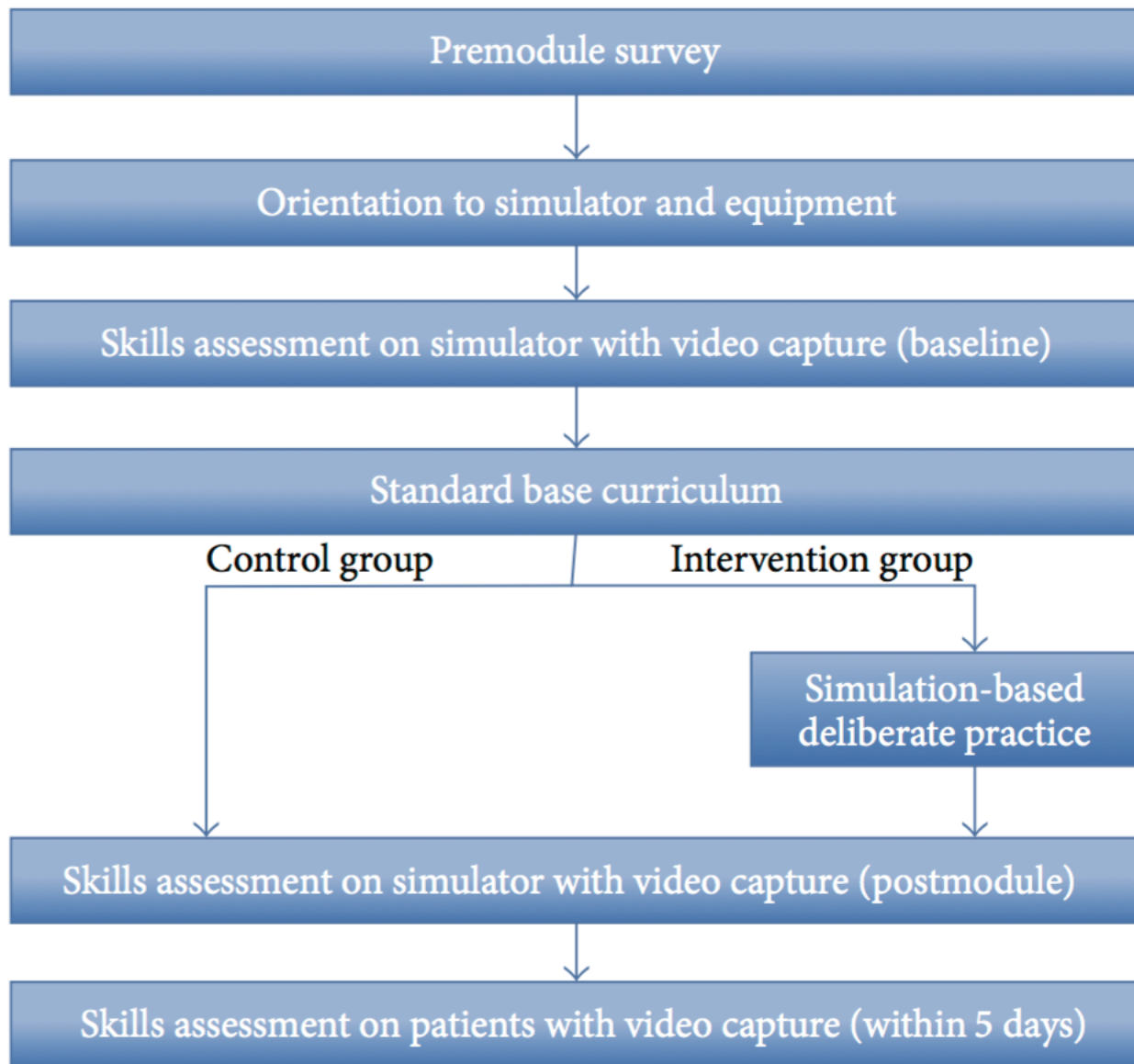


FIGURE 1: Study flow chart following informed consent and enrollment.

Fidelity of simulation? High vs Low?

Anesthesiology 2001; 95:343-8

© 2001 American Society of Anesthesiologists, Inc. Lippincott Williams & Wilkins, Inc.

Fiberoptic Orotracheal Intubation on Anesthetized Patients

Do Manipulation Skills Learned on a Simple Model Transfer into the Operating Room?

Viren N. Naik, M.D., M.Ed.,* Edward D. Matsumoto, M.D., M.Ed.,† Patricia L. Houston, M.D., M.Ed., F.R.C.P.C.,‡
Stanley J. Hamstra, Ph.D.,§ Raymond Y.-M. Yeung, M.B.B.S., F.R.C.P.C.,|| Joseph S. Mallon, M.D., F.R.C.P.C.,#
Terry M. Martire, R.R.C.P.**

Fiberoptic Orotracheal Intubation on Anesthetized Patients

Do Manipulation Skills Learned on a Simple Model Transfer into the Operating Room?

Viren N. Naik, M.D., M.Ed.,* Edward D. Matsumoto, M.D., M.Ed.,† Patricia L. Houston, M.D., M.Ed., F.R.C.P.C.,‡ Stanley J. Hamstra, Ph.D.,§ Raymond Y.-M. Yeung, M.B.B.S., F.R.C.P.C.,|| Joseph S. Mallon, M.D., F.R.C.P.C.,# Terry M. Martire, R.R.C.P.**

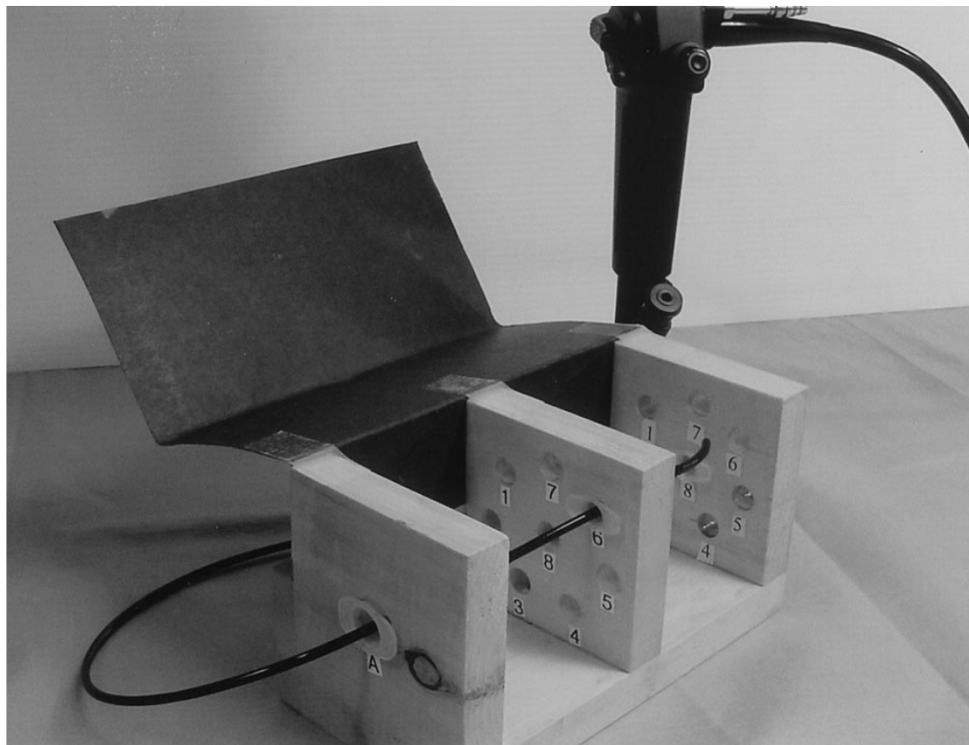
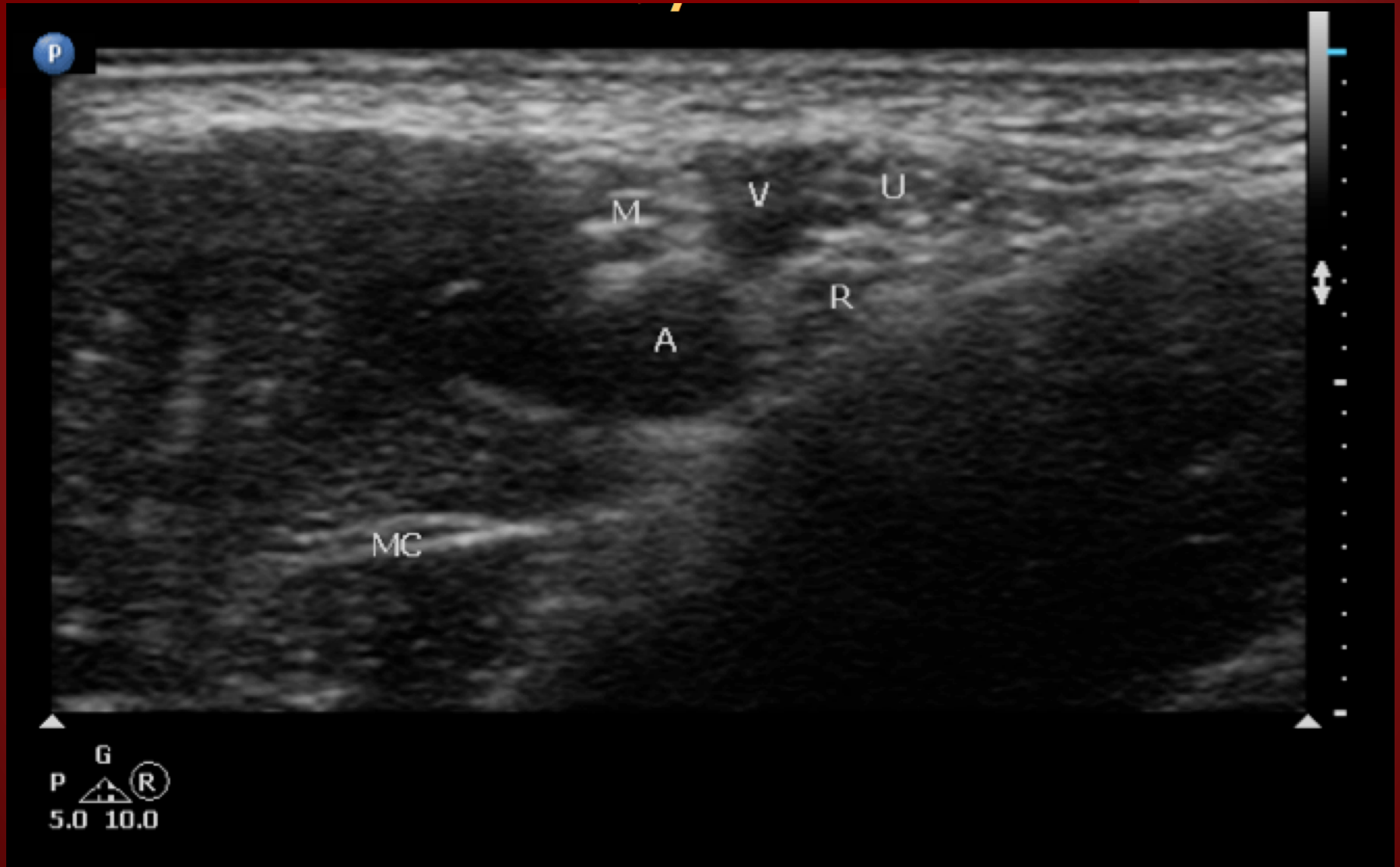


Fig. 1. “Choose-the-hole” model designed by Dr. Arthur Frederick David Cole (Assistant Professor, University of Toronto, Toronto, Ontario, Canada).⁸ The model consists of three wooden

Fidelity of Technique: High vs Low?



[Display Settings:](#) ☒ Abstract[Send to:](#) ☒

Reg Anesth Pain Med. 2012 Sep-Oct;37(5):473-7. doi: 10.1097/AAP.0b013e3182576b6f.

A prospective, randomized comparison between perivascular and perineural ultrasound-guided axillary brachial plexus block.

Bernucci F, Gonzalez AP, Finlayson RJ, Tran de QH.

Department of Anesthesia, Montreal General Hospital, McGill University, Montreal, Quebec, Canada.

Abstract

BACKGROUND: This prospective, randomized, observer-blinded study compared perivascular (PV) and perineural (PN) ultrasound-guided axillary brachial plexus block (AXB) for upper extremity surgery.

METHODS: Fifty patients were randomly allocated to receive a PV (n = 25) or PN (n = 25) ultrasound-guided AXB. The local anesthetic agent (lidocaine 1.5% with epinephrine 5 µg/mL) and total volume (32 mL) were identical in all subjects. For both groups, the musculocutaneous nerve was first located and then anesthetized using 8 mL. Subsequently, in the PV group, 24 mL was deposited dorsal to the axillary artery (6-o'clock position). In contrast, for the PN group, the median, ulnar, and radial nerves were individually anesthetized with volumes of 8 mL. During the performance of the block, the performance time, number of needle passes, and complications (vascular puncture, paresthesia) were recorded. Subsequently, a blinded observer assessed the onset time, block-related pain scores, and success rate (surgical anesthesia). The main outcome variable was the total anesthesia-related time (sum of performance and onset times).

RESULTS: No differences were observed between the 2 groups in terms of success rate (92%-96%), total anesthesia-related time (27.1-29.0 min), and block-related pain scores. However, the PV technique required fewer needle passes (3.5 [SD, 1.0] vs 8.2 [SD, 2.2]; P = 0.000) as well as a shorter performance time (8.2 [SD, 2.3] vs 15.7 [SD, 3.2] min; P = 0.000) and was associated with a lower incidence of paresthesia (8 vs 52%; P = 0.001). In contrast, the PN technique resulted in a quicker onset time (13.8 [SD, 7.0] vs 18.9 [SD, 7.0] min; P = 0.021) and a decreased incidence of vascular puncture (0 vs 24%; P = 0.01).

CONCLUSIONS: Perivascular and PN ultrasound-guided AXBs result in comparable success rates and total anesthesia-related times. Because of fewer needle passes and a shorter performance time, the PV technique provides a simple alternative for ultrasound-guided AXB.

2
UN
FSCT
Surv
TM



AXI
PREINJ

Breadth of Training

- What does the average consultant need?
- Spinal/epidural alone?
- Neuraxial + basic PNBs?
- Neuraxial + cPNBs ???

Role of Fellowship Training

- What is the role of the fellowship in regional anaesthesia education?
- Availability?
- Advanced techniques
- Acute pain management skills
- Training the trainers
- Research skills

[Reg Anesth Pain Med. 2005 May-Jun;30\(3\):226-32.](#)

The training and careers of regional anesthesia fellows--1983-2002.

Neal JM¹, Kopacz DJ, Liguori GA, Beckman JD, Hargett MJ.

Author information

Abstract

BACKGROUND AND OBJECTIVES: The education and subsequent careers of regional anesthesia fellows have not been examined but may provide insight into improving future fellowship training and/or the future of the subspecialty.

METHODS: Regional anesthesia fellows educated during a 20-year period (1983-2002) were asked to complete a comprehensive survey that detailed their training, current professional setting, and use of regional anesthesia, and how they foresee the future of regional anesthesia. A separate survey of academic anesthesiology chairs assessed the role of and need for regional anesthesiologists in teaching departments.

RESULTS: Twelve regional anesthesia fellowship programs in the United States and Canada provided contact information on 176 former fellows. The survey response rate from those practicing in North America was 49% (77/156). Two of the 12 responding institutions have trained 68% of regional anesthesia fellows. Of respondents, 61% are or have been in academic practice. Regional anesthesia remains an integral part of most respondents' current practice, as evidenced by significant use of regional techniques, active involvement in subspecialty societies, and participation in continuing medical education programs. Academic chairs indicate that fellowship-trained regional anesthesiologists play important roles in resident education and are in demand by academic departments.

CONCLUSIONS: This report details how regional anesthesia fellows from 1983 to 2002 were trained and how they currently practice and examines their insights regarding the strengths and weaknesses of past and future regional anesthesia education.

Comment in

[Fellowship training in regional anesthesia.](#) [Reg Anesth Pain Med. 2005]

PMID: 15898024 [PubMed - indexed for MEDLINE]



Summary

- Should we continue to train anaesthetists in regional anaesthesia?
- Where have we been with RA training?
- Where are we now?
- Where should we be going?
- What is current evidence?

A Scoping Review of the Evidence for Teaching Ultrasound-Guided Regional Anesthesia

Catherine M. Nix, MBChB, FCARCSI,* Clarita B. Margarido, MD, PhD,†
Imad T. Awad, MBChB, FCARCSI,* Arsenio Avila, MD,* Jeffrey J.H. Cheung, MSc,‡
Adam Dubrowski, PhD,‡ and Colin J.L. McCartney, MBChB, FCARCSI, FRCA, FRCPC*

Abstract: A scoping review was performed to assess published evidence regarding how best to teach ultrasound-guided regional anesthesia (UGRA). The literature search yielded 205 articles, of which 35 met the inclusion criteria. Current literature on the topic can be divided into 3 main themes: the development of motor skills, learning and teaching sonoanatomy, and understanding of the requirements for establishing a UGRA education program and evaluation. We discuss the current status and future direction of research on UGRA training.

(*Reg Anesth Pain Med* 2013;38: 00–00)

Literature is evolving on how best to teach the skills associated with, and establish a program for, ultrasound-guided regional anesthesia (UGRA). Recently, the American Society of Regional Anesthesia and Pain Medicine (ASRA) published its “Guidelines for Fellowship Training in Regional Anesthesiology and Acute Pain Medicine.”¹ The ASRA Web site lists 54 “regional anesthesia/acute pain medicine fellowships.”² However, universal agreement is lacking on how to teach ultrasonography for regional anesthesia.³

The field of laparoscopic surgery encountered a similar phenomenon with the advent of laparoscopic techniques. In 2007, educators wrote “appropriate training is mandatory... there is an entirely different set of skills involved and a different

Articles were retrieved from the US National Library of Medicine, MEDLINE, Excerpta Medica, Embase, the Cochrane Database of Systematic Reviews, and the Cochrane Central Register of Controlled Trials. The search terms *ultrasound-guided regional anesthesia, UGRA, regional, local, ultrasound, guided, education, training, mentor, and in-service* were used in combination with the medical subject headings *local anesthesia, anesthesiology, medical education, continuing medical education, graduate medical education, and postgraduate education (January 1982–Aug 2012)*.

In addition, 3 authors conducted separate PubMed, Google Scholar, and Google searches using the following search terms: *teaching UGRA to residents* and *teaching UGRA to trainee anesthesiologists*. We also searched the bibliographies of relevant articles.

Full text articles in English concerning UGRA teaching methods and published in peer-reviewed journals were included. The list of qualifying studies was derived by simple majority (see Tables 3–8). Excluded trials are listed in Tables 1 and 2.

We summarized our findings under themes and provided some explanatory detail where necessary.

Where relevant, education literature outside the UGRA

REVIEW ARTICLE

Learning and Teaching Motor Skills in Regional Anesthesia *A Different Perspective*

Reuben J. Slater, BSc (Hon), BMed, FANZCA, Damian J. Castanelli, MBBS, MClin Ed, FANZCA,†‡
and Michael J. Barrington, PhD, MBBS, FANZCA*§*

Competency-based assessment tools for regional anaesthesia: a narrative review

A. Chuan^{1,2,*}, A. S. Wan², C. F. Royse^{3,4} and K. Forrest⁵

¹South Western Sydney Clinical School, University of New South Wales, Sydney, Australia, ²Department of Anaesthesia, Liverpool Hospital, Sydney, Australia, ³Department of Surgery, University of Melbourne, Melbourne, Australia, ⁴Department of Anaesthesia, Royal Melbourne Hospital, Melbourne, Australia and ⁵Faculty of Health Sciences and Medicine, Bond University, Queensland, Australia

*Corresponding author. E-mail: dr.chuan@iinet.net.au

Abstract

Competency-based assessment tools are used in regional anaesthesia to measure the performance of study participants, trainees, and consultants. This narrative review was performed to appraise currently published assessment tools for regional anaesthesia. A literature search found 397 citations of which 28 peer-reviewed studies met the inclusion criteria of primary psychometric evaluation of assessment tools for regional anaesthesia. The included studies were diverse in the type of assessment and the skill set being assessed. The types of assessments included multiple-choice questions, hand-motion analysis, cumulative sum, visuospatial and psychomotor screening, checklists, and global rating scales. The skill sets that were assessed included holistic regional anaesthesia technical and non-technical performance observed at the bedside, to isolated part-tasks, such as needle tip visualisation under ultrasound. To evaluate validity and reliability, we compared the studies against published medical education consensus statements on ideal assessment tools. We discuss the relative merits of different tools when used to assess regional anaesthesia, the importance of psychometrically robust assessment tools in competency-based anaesthesia education, and directions for future education research in regional anaesthesia.

Keywords: anaesthesia; conduction; credentialing; psychometrics; reproducibility of results

Competency-based assessment tools for regional anaesthesia: a narrative review

A. Chuan^{1,2,*}, A. S. Wan², C. F. Royse^{3,4} and K. Forrest⁵

- MCQs
- Hand motion analysis
- CuSum
- Visuospatial and Psychomotor screening
- Checklists and Global Rating Scales

Competency-based assessment tools for regional anaesthesia: a narrative review

A. Chuan^{1,2,*}, A. S. Wan², C. F. Royse^{3,4} and K. Forrest⁵

- ? Psychometric tools for screening trainees
- ? Focus resources on trainees with weaknesses
- Don't forget non-technical skills



Education in Regional Anesthesia SIG

Join

Note: There is no cost to join the Education in Regional Anesthesia SIG. By clicking "Join," you will automatically be added to the group. To view and make changes to your SIGs, click on "Account" in the upper right.



[Take the Education in Regional Anesthesia Poll](#)

Education in Regional Anesthesia Special Interest Group

Join ASRA

[Benefits](#)

[Categories of membership](#)

[Group discount](#)

Special interest groups

- [Cancer Pain and Supportive Care](#)
- [Education in Regional Anesthesia SIG](#)
 - [Education in Regional Anesthesia SIG Newsletter Archives](#)
 - [Education Podcasts](#)
 - [Education in Regional Anesthesia Surveys](#)
 - [Education Research Opportunities](#)
 - [Education CME](#)
 - [ASRA Educational Resources](#)
 - [Leadership & Founding Members](#)
 - [Get Involved](#)

Focus on methods of teaching, professional development, learning theory, curriculum design, and education research

ASRA SIG

- Chair: Colin McCartney
- Vice Chair: Reva Ramlogan
- CME lead: Stuart Grant
- Website: Brian Allen
- Podcast: Jaime Ortiz
- Research: Alwin Chuan

ASRA SIG Research

- One of the original aims of the SIG was to encourage international collaboration in education research

Dr. Alwin Chuan



Twitter



Alwin Chuan (@AlwinChuan) | Twitter

Alwin Chuan

Images may be subject to copyright.

Table 1 – Top 10

median	25th quartile	75th quartile	<u>min range</u>	max range	%	High priority topics
8	7	9	3	10	0.89	What endpoints/milestones should be achieved on a simulator prior to clinical performance of UGRA?
8	6	9	3	10	0.89	Does simulation training show an improvement in clinical outcomes such as improved efficacy, time taken, and less errors?
<p>Does simulation training improve clinical outcomes?</p> <p>Is there a core minimum set for RA techniques?</p> <p>Are RA skills generalizable?</p> <p>What criteria should be used to evaluate success?</p> <p>What tools should we used consistently across centres?</p> <p>What is best method for post-certification anesthetists to learn USRA?</p> <p>How to maintain or improve knowledge after weekend workshop?</p>						
8	6	8	1	10	0.82	education research?
8	6	9	2	10	0.79	What are the most efficacious means for practicing anesthesiologists (<u>consultants</u>) to learn blocks?
7.5	6	9	3	10	0.87	What should be consensus clinical endpoints to standardise RA education study endpoints?
7.5	6	8	1	10	0.79	How do you maintain or improve knowledge retention after a one-day workshop?

Where should we go?

- Structured training: competence-based during residency: simulation, staged learning
- Levels of training: Competence in basic techniques that can be maintained in practice
- Fellowship training for those who want advanced skills

What should be the standard?

- We need to take regional anaesthesia training seriously before we lose the subspecialty
- All consultants demonstrated competent to perform basic regional techniques
- Cohort of specialist colleagues capable of training and implementing advanced regional techniques
- Consistency of training across programs
- Close collaboration with pain medicine

The future

- See one, do one, teach one has never been acceptable
- Understand the value of RA
- Improve the standards of basic training based on realistic goals
- Invest in subspecialty training for the next generation through fellowship training
- Develop next generation of clinician scientists to move the specialty forward