

PICTURE PENDING

Curriculum Vitae

NavParkash S. Sandhu, MS, MD

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Personal Data

Birth Date: November 5, 1959.

Citizenship: USA

Education

1981 M.B.B.S. Panjab University, Chandigarh, India (Dayanand Medical College & Hospital, Ludhiana)

1985 MS (Surgery) Panjab University, Chandigarh, India (Dayanand Medical College & Hospital, Ludhiana)

1994 ECFMG certification

Postdoctoral Training

7-1-1996- 6-30-1999 Resident in Anesthesiology, New York University Medical Center, New York.

7-1-1995 - 6-30-1996 Intern in Surgery, Bronx Lebanon Hospital Center, Bronx, NY.

9-26-1986 - 12-31-1989 Registrar (Senior Resident), Department of Surgery, Postgraduate Institute of Medical Education & Research, Chandigarh, India.

1-1-1984 - 12-31-85 PG-cum-Registrar, Dept of Surgery, Dayanand Medical College & Hospital, Ludhiana, India.

1-1-1983- 12-31-83 House Surgeon in General Surgery, at Dayanand Medical College & Hospital, Ludhiana, Punjab University, Chandigarh, India.

1-1-1982 - 12-31-1982 Compulsory Rotatory Internship, Dayanand Medical College & Hospital, Ludhiana, India.

Licensure and Certification:

1981 MBBS, Panjab University, Chandigarh, India.

1983 Medical License, Punjab, India (EP 22419) (April 6, 1983)

1985 Master of Surgery, Panjab University, Chandigarh, India

1992 USMLE I

1993 Medical License, Kingdom of Saudi Arabia

1993 USMLE II

1993 ECFMG

1995 USMLE III

1999 Medical License, New York State (213872)

2000 Diplomate, American Board of Anesthesiology

2003, 2006, 2007 Medical License (Temporary) General Medical Council of UK (#6080921)

2006 Medical License, California State (C 52254)

2009 Passed Maintenance of Certification Exam American board of Anesthesiology valid up to 12/31/2020

Academic Appointments:

8/2011 - Present Clinical Professor of Anesthesiology (step- III) UCSD SOM, San Diego

9/2006 – 7/2011 Associate Clinical Professor of Anesthesiology,(step I - III) UCSD Medical Center San

Diego, CA USA

2000 – 2006 Assistant Professor of Anesthesiology, New York University Medical School, New York, NY, USA
 2003 Attending Strong Memorial Hospital, University of Rochester, Rochester NY, USA (Temporary appointment) to teach their faculty ultrasound guided nerve blocks.
 7/1999 – 6/2000 Instructor, Department of Anesthesiology, New York University Medical School, New York, NY
 9/1986 – 12/1989 Senior Resident (Registrar), Department of Surgery, Postgraduate Institute of Medical Education & Research, Chandigarh, India.
 1/1984 – 12/1985 PG-Cum-Registrar, Dept. of Surgery, Dayanand Medical College & Hospital, Ludhiana, India.

Hospital Appointments:

8/2012 to 9/2017 Division Chief of Regional Anesthesia UCSD Healthcare
 8/2010-7/2012 Director of Regional Anesthesia & Acute Pain UCSD Health Care
 8/2007 – 7/2011 Associate Clinical Professor UCSD San Diego, CA
 9/2006 – 7/2007 Attending UCSD Hospital Center, San Diego, CA
 2007- Present Staff Anesthesiologist Veterans Affairs Medical Center, La Jolla, San Diego, CA.
 7/1999 – 8/2006 Assistant Attending, Dept. of Anesthesiology, New York University Medical Center, New York, NY.
 7/1999 – 8/2006 Associate Attending, Dept. of Anesthesiology, Bellevue Hospital Center, New York, NY
 2003 Honorary Attending Strong Memorial Hospital, University of Rochester, Rochester NY (Temporary appointment to train their faculty in ultrasound guided blocks).
 2003 Honorary Consultant appointment at Taunton and Somerset Hospital England, UK.
 2003 Honorary appointment at James Cook University Hospital, Middlesborough, England, UK.
 3/1993 – 3/1995 Surgical Specialist, Ministry of Health, at Hail General Hospital, Hail, Saudi Arabia.
 9/1986 – 12/1989 Registrar, Department of Surgery, Postgraduate Institute of Medical Education & Research, Chandigarh, India.;
 1/1984 – 12/1985 Registrar, Department of Surgery, Dayanand Medical College, Ludhiana, India.
 1/1983-12/1983 Senior House Surgeon, Dept of Surgery, Dayanand Medical College & Hospital, Ludhiana, India

Other Professional Positions:

2003 Honorary Attending, Strong Memorial Hospital, University of Rochester, Rochester NY (Temporary appointment).
 1/1990 – 3/1993 Medical Officer, Punjab Civil Medical Services, Government of Punjab, Chandigarh, India
 1/1986 – 9/1986 Medical Officer, Punjab Civil Medical Services, Government of Punjab, Chandigarh, India

Awards and Honors:

2001 Certificate of Appreciation for Scientific and Educational Exhibit Titled "Ultrasound Guided Peripheral Nerve Blocks" at annual conference from **American Society of Anesthesiologist October 2001.**
 2001 Letter of appreciation for holding Mini-workshop "Use of ultrasound for peripheral blocks" in Post Graduate Assembly of **New York State Society of Anesthesiologists.**
 2002 **First prize** for Scientific Exhibit" Ultrasound Guided Peripheral Nerve Blocks" at **International Anesthesia Research Society for annual congress** at San Diego March 2002
 2002 **Second prize** for scientific and educational exhibit. "Ultrasound Guided Peripheral Nerve Blocks" at **American Society of Anesthesiology annual meeting** October.12-16, 2002 at

Orlando, FL.
2002 **First Prize** for best exhibit for clinical application for showcasing techniques of using ultrasound for various peripheral nerve blocks. **56th Annual Postgraduate Assembly** of New York State Society of Anesthesiologists, New York, NY. December 7 - 10, 2002.

- 2003 **Second prize** for scientific exhibit at **77th Annual Congress of International Anesthesia Research Society at New Orleans**, March 21-25, 2003.
- 2004 **Second prize** for scientific and educational exhibit Use of Ultrasound for Peripheral Nerve Blocks. **78th congress of International Anesthesia Research Society at Tampa**, Florida. March 27-31, 2004.
- 2005 **Second prize** for scientific and educational exhibit Use of Ultrasound for arterial, central venous and peripheral venous access. **79th congress of International Anesthesia Research Society at Honolulu**, Hawaii. March 11-15, 2005.
- 2005 **2005 Best Exhibit for Clinical Application Award** for use of ultrasound for peripheral nerve blocks at 59th Post graduate Assembly of New York State Society of Anesthesiology at New York December 10-12, 2005.
- 2005 **Honorable Mention Award** for use of ultrasound for arterial, central venous and peripheral venous catheterization at 59th Post graduate Assembly of New York State Society of Anesthesiology at New York December 10-12, 2005.
- 2005/06 **Who's Who in America, 2005**
- 2006 Letter of appreciation from University of HULL England for being key note speaker at Ultrasound Guided Nerve Blocks course.
- 2006 Letter of appreciation from International Anesthesia Research Society for conducting "Ultrasound guided Vascular Access Workshop" in San Francisco, CA
- 2007 Letter of appreciation from International anesthesia Society for conducting Ultrasound Guided Vascular Access Workshop in Orlando, FL
- 2008 Letter of appreciation from International anesthesia Society for conducting Ultrasound Guided Vascular Access Workshop in San Francisco, CA
- 2009 Letter of appreciation from International anesthesia Society for conducting Ultrasound Guided Block Workshop in San Diego, CA
- 2010 Letter of appreciation from International anesthesia Society for conducting Ultrasound Guided vascular access Workshop in Honolulu, HI
- 2010 Best Doctors of America
- 2010 **Best teacher Award** for 2009-10 chosen by resident of UCSD anesthesiology
- 2012 **Best clinical paper award** at Western Anesthesia Resident Conference (WARC) 2012 Los Angeles: Khatibi B, & Sandhu NS; ultrasound guided Medial and lateral antebrachial cutaneous nerve blocks.
- 2013 **San Diego's Top Doctors** nominated in 2013

Major Administrative Responsibilities:

- 2002 – 2006 Member of Departmental Research Committee, Department of Anesthesiology, NYU School of Medicine, New York, NY
- 2007- Present Chair Resident Education Committee in Regional Anesthesia UCSD
- 2010 Director of Regional Anesthesia and Acute Pain UCSD Medical Center San Diego, CA.
- 2012 – Present Division Chief of Regional Anesthesia and Acute Pain

Memberships in Professional Societies:

1. Association of Surgeons of India, North West Chapter; Life Member
2. American Society of Anesthesiology
3. New York State Society of Anesthesiology
4. International Anesthesia Research Society
5. American Society of Regional Anesthesia and Pain
6. Orthopedic Anesthesia and Pain rehabilitation Society
7. California Society of Anesthesiology

Teaching Experience:

1984 – 1985

P.G. Cum Registrar in Surgery, Dayanand Medical College, Ludhiana, Punjab, India. Responsible for teaching medical students and house surgeons in outpatient clinics about history taking, physical examination, minor surgical procedures, etc. as well as teaching about management of surgical cases for inpatients.

1986 – 1989

Senior Resident in Surgery (Registrar), Post Graduate Institute of Medical Education and Research, Chandigarh, India. Responsible for teaching residents about clinical management of general surgical cases and operative techniques. Managed minor and major surgical cases independently.

1999 – 2000

Instructor, Department of Anesthesiology, New York Medical Center, New York, NY.

2000 – 2006

Assistant Professor: Department of Anesthesiology, NYU School of Medicine, New York, NY

2006 – 2007

Assistant Clinical Professor UCSD San Diego

2007 - 2009

Associate Clinical Professor Step II University of California San Diego

2009 – Present

Associate Clinical Professor step III

2010

Division Chief of regional Anesthesia and Acute Pain USSD Medical Center, San Diego

Mentoring of Residents in Research:

2001 Dr Nita Engineer: a case Report of Metformin induced severe lactic acidosis.

2002 Dr George Miller: A cadaver study to study determinants of migration of epidural catheters. This project was **adjudged best research project** in the department and was awarded a cash prize of \$ 500.

2003 Dr Babak Maharlouie Multiple simultaneous nerve blocks using Ultrasonography, (a case report)

2003 Dr Deepal Sidhu: A Prospective study of reversal of nerve blocks.

2004 Dr Attiqe Rahman: a retrospective study of infraclavicular blocks in children ages 1-14.

2004-5 Dr Biraj Patel: Multiple simultaneous nerve blocks using Ultrasonography, (case report)

2006 Dr Edson Erkulwater: Efficacy of compression of Subclavian and Axillary artery in volunteers.

2006 Dr Praveen Gollapudi: single vs multiple injections in sheep Brachial plexus.

2006 Dr Mehbooba Yeasmin Median nerve block in arm (case REPORT)

2008 Eugene Cha Double axillary artery observed during infraclavicular block. Presented at Western Anesthesia Research (WARC) April 23, 2008(case reports)

2009-10 Dr Quin Vu: Migrated interscalene catheter causing ipsilateral hemi-facial vasospasm.

2012 Dr. Bahareh Khatibi; Medial and lateral antebrachial cutaneous blocks **won first prize at Western Anesthesia Resident Conference WARC 2012** Los Angeles

2013 Dr. Jacklyn Sztain, Martin Krause superior laryngeal block using curvilinear probe. WARC 2013 New Mexico

2014 Dr. James Choi; US Guided Metacarpal Block **WARC 2014** Los Angeles, CA.

2017 Dr. Ying Zhou: Motor sparing distal median and sup radial nerve continuous block in hand burns. **WARC 2017** Portland, OR.

Major Research Interests:

Use of Ultrasound for regional anesthesia.

Ultrasonography imaging of peripheral nerves.

Catheter techniques for nerve blocks

Use of ultrasound for central venous access

Use of ultrasound for arterial lines.

Use of ultrasound for peripheral venous access.

Advanced Airway techniques : fibroptic, videoscopes, retrograde intubation , surgical airway, Ultrasound guided airway blocks

1. Multicenter study on Incidence of Gastrointestinal malignancies in Punjab. Retrospective study of 1592 cases. Approved by Punjab University, Chandigarh, India. December 1985
1. Principal Investigator for study Ultrasound guided infraclavicular block. at NYU Medical Center,
3. Principal investigator of study, "Ultrasound guided popliteal Fossa block." at NYU Medical Center
4. Principal investigator for study reversal of Infraclavicular block.
5. Principal investigator of retrospective study of ultrasound guided infraclavicular block
6. Principal investigator Posterior cutaneous nerve imaging and block in volunteers.

Patents:

1. Designed a Needle Aligner for Ultrasound guided nerve blocks. US Patent # 6,485,426. Needle aligner for ultrasound guided nerve blocks, vascular access or any biopsy procedures. This keeps the needle under the ultrasound beam at all times improving the imaging of needle. This is an improvement over all existing devices.
2. A device to facilitate endotracheal intubation using fiberoptic bronchoscope or tube exchanger. Details confidential. In the process of application for Patent.
3. A device to decrease cuff induced ischemia and pressure necrosis of trachea caused by endotracheal tubes or tracheostomy tubes. Details confidential. In the process of application for Patent.

Other:

Presentations:

1. **Sandhu N**: Open management of septic abdomen by Marlex mesh and zipper. Asian Pacific Conference of Gastroenterology, Seoul, South Korea, 1989.
2. **Sandhu N**: Comparison of performance characteristic of Wuscope and Macintosh laryngoscope. ASA Annual Meeting, Dallas, TX, October, 1999.
3. **Sandhu N**: Ultrasound guided infraclavicular brachial plexus block. International Anesthesia Research Society 75th Clinical and Scientific Congress, Ft. Lauderdale, FL, March 16-20, 2001.
4. **Sandhu N**: Ultrasound guided popliteal fossa block. International Anesthesia Research Society 75th Clinical and Scientific Congress, Ft. Lauderdale, FL, March 16-20, 2001.
5. **Sandhu NS**, Bahniwal CS, Capan LM: Ultrasound guidance reduces local anesthetic requirement for infraclavicular brachial plexus block. Presented at American Society of Anesthesiology, New Orleans, LA. October 15, 2001.
6. **Sandhu NS** , Sidhu DS "The Cost Comparison of Infraclavicular Brachial Plexus Block by Nerve Stimulator and Ultrasound Guidance" as a Poster Discussion at ASRA's 2003 Spring Meeting in San Diego April 4, 2003, A-63.
7. Clinical Experience with Ultrasound Guided Infraclavicular Brachial Plexus Block. Poster discussion at IARS annual meeting Honolulu, HI March 11-15, 2005.
8. **Sandhu NS**, Singh J, Gollapudi P. The Role of the Septae in Neurovascular Sheath around the Brachial Plexus. Presented at the American Society of Regional Anesthesia, 32nd, Spring Meeting Vancouver, British Columbia, Canada April 19-22, 2007
9. **Sandhu NS**, Singh J, Capan LM: Ultrasound guided sciatic nerve block in popliteal fossa: a combined prospective and retrospective study of 100 patients. Presented at the American Society of Regional Anesthesia, 32nd, Spring Meeting Vancouver, British Columbia, Canada April 19-22, 2007
10. **Sandhu NS, Miller G, Singh J**. Role of skin movement in epidural catheter migration: A cadaver study. Poster discussion at the American Society of Regional Anesthesia 32nd Spring Meeting Vancouver, British Columbia Canada April 19-22, 2007

Scientific and Education Exhibits:

- 2001 Use of ultrasound for various nerve blocks. American Society of Anesthesiology Annual Meeting, New Orleans, LA, October 12-15, 2001.
- 2002 Use of ultrasound for various nerve blocks. International Anesthesia Research Society's 76th Annual Meeting, San Diego, CA, March 16-20, 2002.
- 2002 "Use of ultrasound for peripheral Nerve Blocks" First World Congress of Regional Anesthesia and Pain Barcelona; Spain May 29 - June 1, 2002
- 2002 "Use of ultrasound for peripheral nerve blocks." American Society of Anesthesiology Annual Meeting, Orlando FL October 2002. This exhibit Won second prize.
- 2002 "Use of ultrasound for peripheral nerve blocks." 56th PGA of New York State Society of Anesthesiologists December 7-10 2002.
- 2003 Use of ultrasound for peripheral nerve blocks 77th annual congress of international society of Anesthesia, march 21-25, 2003 at New Orleans, LA
- 2003 "Use of ultrasound for peripheral nerve blocks" American Society of Anesthesiology Annual Meeting, San Francisco October 2003
- 2004 Use of ultrasound for various nerve blocks. International Anesthesia Research Society's 77th Annual Meeting, Tampa, FL, March 27-31, 2004.
- 2005 Use of ultrasound for various peripheral nerve blocks. International Anesthesia Research Society's 79th Annual Meeting, Honolulu, HI, March 11-15, 2005.
- 2005 Use of ultrasound for vascular access; arterial central and peripheral venous lines nerve blocks. International Anesthesia Research Society's 79th Annual Meeting, Honolulu, HI, March 11-15, 2005 (Won second prize)
- 2005 American Society of Anesthesiology; Annual meeting use of Ultrasound for peripheral nerve blocks. October 21-26, 2005 at Atlanta GA.
- 2005 American Society of Anesthesiology; Annual meeting use of Ultrasound for vascular access. October 21-26, 2005 at Atlanta GA.
- 2005 of Ultrasound for Vascular Access and Use of Ultrasound for Peripheral Nerve blocks, 59th Postgraduate Assembly of New York State Society of Anesthesiologists, December 10-12, 2005 Use New York, NY

National and international Workshops and Mini-Workshops:

1. **Mini-Workshop:** *Ultrasound Guided Nerve Blocks: How to be Successful.* 55th Postgraduate Assembly of New York State Society of Anesthesiologist, New York, NY, December 7-11, 2001.
2. **Workshop:** First National Study Day: Ultrasound for Regional Anesthesia, England, UK. Attended by 50 Consultants from UK and Ireland.
3. **Workshop:** on use of Ultrasound for Regional Anesthesia. Invited speaker for lecture and demonstration of Infraclavicular block at James Cook University Hospital Middlesborough, England, UK. Attended by 20 anesthesiologists. September 29, 2003
4. **Mini-Workshop:** in 57th Post Graduate Assembly of NYSSA use of Ultrasound in Anesthesia: Vascular Access and Regional Anesthesia. December 11- 16, 2003
5. **Workshop:** "Peripheral Nerve blocks" December 11-16, 2003 at 57th Postgraduate Assembly of New York State society of Anesthesiologists, New York NY.
6. **Workshop:** "Use of Ultrasound for Nerve Blocks and Vascular Access", New York NY. Lecture and hands-on course for Gulf Coast Ultrasound INC at Hotel Waldorf Astoria December 17, 2003. CME lecture and hands on course for anesthesiologist.
7. **Workshop:** Auckland, New Zealand; Invited to run a workshop cum seminar on Ultrasound Guided Nerve Blocks and Vascular Access attended by 42 consultants from Australia and New Zealand. March 11, 2004.
8. **Workshop:** Cork, Ireland; Cork University Hospital. Workshop on Ultrasound Guided Nerve Blocks. Attended by consultants from Ireland and UK. Invited speaker, May 11-14, 2004.
9. **Workshop:** on Peripheral Nerve Blocks using Ultrasonography December 10-12 and 14th 2004 at PGA of New York State Society of Anesthesiology at New York.
10. **Mini-Workshop:** Use of Ultrasound in Anesthesia; for Regional Anesthesia, Peripheral and Central Venous Access and Arterial Lines. December 14, 2004 at PGA of New York State

- Society of Anesthesiology at New York.
11. **Workshop:** Peripheral Nerve Blocks IARS Annual Meeting Honolulu HI March 11-15, 2005
 12. **Workshop:** Heidelberg, Germany: invited guest speaker at symposium: Ultrasound and Regional Anesthesia April 1-3, 2005 organized by universities of Heidelberg, Manheim (Germany) and Toronto (Canada).
 13. **Workshop:** Director of workshop "Use of Ultrasound for Peripheral Nerve Blocks" at Annual Meeting of Scandinavian Society of Anesthesiology and intensive care Medicine June 29-July 2, 2005 Reykjavik , Iceland
 14. **Workshop:** Director of workshop "Use of Ultrasound for Vascular Access" at Annual Meeting of Scandinavian Society of Anesthesiology and Intensive Care Medicine Reykjavik, Iceland June 29-July 2, 2005.
 15. **Workshop:** ASA Annual Meeting; Peripheral Nerve Blocks Using Ultrasound. October 21-26, 2005 in Atlanta, GA.
 16. **Workshop:** Director of workshop "Use of Ultrasound for Vascular Access" at Annual Meeting of International Anesthesia Research Society 80th Clinical & Scientific Congress, San Francisco March 24-28, 2006.
 17. **Workshop** Ultrasound Guided Blocks Above Clavicle at 31st Annual Meeting of American Society for Regional Anesthesia and Pain April 6-9, 2006 Rancho Mirage, California.
 18. **Seminar Cum workshop:** Key note speaker Ultrasound Guided Peripheral Nerve Blocks and Vascular Access. Organized by NYU and Rikshospitalet, Oslo May 19-20, 2006, Oslo, Norway.
 19. **Workshop:** ASA annual meeting; Peripheral Nerve blocks using ultrasound, October 14-18, 2006, Chicago IL
 20. **Workshop:** Ultrasound Guided Peripheral Nerve Blocks: UCSD regional anesthesia seminar and workshop October 28-29, 2006
 21. **Workshop:** key note speaker Ultrasound Guided Regional Anesthesia. Hull and East Yorkshire NHS, Hull, England UK, November 1-2, 2006.
 22. **Workshop:** Ultrasound Guided Nerve Blocks. 5th annual NYSORA meeting New York NY December 16-17, 2006.
 23. **Workshop:** Ultrasound Guided Nerve Blocks, UCSD Anesthesiology Update 2007 San Diego January 3-6, 2007.
 24. **Workshop:** Ultrasound Guided Vascular Access UCSD Anesthesiology Update 2007 San Diego January 3-6, 2007.
 25. **Workshop:** UCSD Anesthesiology Update 2007 San Diego Ultrasound Guided Nerve Blocks, January 3-6, 2007.
 26. **Workshop:** Indian Association of Cardiothoracic Anesthesia, February 23-24, 2007. Lecture on Ultrasound guided vascular access
 27. **Workshop:** Ultrasound Guided Peripheral Nerve Blocks, Post Graduate Institute of Medical Education Research, Chandigarh, India February 26, 2007.
 28. **Workshop:** Department of Anesthesiology Clinica Colisanita 15th Annual Course March 14-15 2007, Bogota Colombia
 29. **Workshop:** IARS 81st Annual Congress Orlando, March 24, 2007 Organizer of Ultrasound Guided Vascular Access.
 30. **Workshop:** Invited speaker for European Society of Regional Anesthesia, Valencia, Spain, September 12-15, 2007
 - a. Panel discussion: Ultrasound guided nerve blocks,
 - b. Workshop: Ultrasound guided nerve block in Adults,
 - c. Workshop: Ultrasound guided nerve block in Children
 - d. Cadaver workshop: nerve blocks
 - e. Moderator of a poster session of European Society of Regional Anesthesia 9-14-07.
 31. **Workshop:** Ultrasound Guided Nerve Blocks at Erasmus hospital, Brussels, Belgium September 18, 2007. A web based live demonstration of infraclavicular, supraclavicular and lateral approach to femoral nerve block and catheter technique attended by 160 anesthesiologists
 32. **Workshop:** Ultrasound Guided Nerve Blocks at University of Hull England, October 31-November 1, 2007.
 33. **Workshop:** UCSD Anesthesia Update 2008: Workshop Ultrasound Guidance for Peripheral

- Nerve Blocks 2008
34. **Workshop:** UCSD Anesthesia Update 2008: Ultrasound Guided Arterial Venous and Central Venous Cannulation 2008
 35. **Workshop:** Organized a workshop: "Ultrasound Guided Arterial Venous and Central Venous Cannulation" at 82nd Annual IARS congress in San Francisco, March 30, 2008
 36. **Workshop:** Use of Ultrasound for Peripheral Nerve Blocks and Vascular Access. **Bogota, Colombia** March 14-15, 2008.
 37. **Workshop:** Use of Ultrasound for Peripheral Nerve Blocks Controversies in Anesthesia organized by Hospital for Special Surgery New York, NY, May 17, 2008.
 - a. Use of ultrasound for PNB. Pro vs con Panel discussion with Dr. Urmey. May 17, 2008
 - b. Workshop ultrasound for lower extremity blocks. May 17, 2008
 38. **Seminar Cum Workshop:** "Ultrasound Guidance for Peripheral Nerve Blocks and Vascular Access". At Postgraduate Institute of Medical Education and Research, Chandigarh, India. August. 8, 2008
 39. **Workshop:** Invited as speaker for Ultrasound Guided Nerve Blocks Workshop at USC Los Angeles CA of September 20, 2008.
 40. **Workshop:** Invited as speaker for Ultrasound Guided Peripheral Nerve Blocks workshop at By Society of California at San Francisco December 8, 2008
 41. **Workshop:** UCSD Anesthesiology Update January 2009:
 - a. Ultrasound guided vascular Access
 - b. Ultrasound guided nerve blocks
 42. **Workshop:** International Anesthesia Research Society 83rd Annual Congress, organizer of Workshop: Ultrasound guided vascular access San Diego, CA March 2009
 43. **Workshop:** Danner Miller Anesthesia Course Big Island, Hawaii August 2009
 44. **Seminar Cum Workshop:** UCSD-Naval Medical Center Intensive Nerve Block Seminar Cum Workshop November 5-6, 2009
 45. **Workshop:** 5th Annual -UCSD NMC San Diego Regional Anesthesia Course November 6-7, 2010
 46. **Workshop:** UCSD Anesthesia Update Workshop Peripheral Nerve Blocks January 2010
 47. **Workshop:** Ultrasound Guided Vascular Access workshop International Anesthesia Research Society 84th Annual Congress, organizer of Workshop: Ultrasound guided vascular access Honolulu, HI March 2010
 48. **Workshop:** California Society of Anesthesiology Workshop "Ultrasound Guided Nerve Blocks" Organizer of workshop & Keynote speaker Fresno, CA March 26, 2011
 49. **Workshop:** 16th International Conference on Continuous Renal Replacement Therapies San Diego February 22 - 25 2011
 50. **Workshop:** The 17th International Conference on Continuous Renal Replacement Therapies Tuesday 14, 2012 - Friday 17, 2012 San Diego CA
 51. **Workshop:** February 17, 2012 workshop "Ultrasound Guided Vascular Access"
 52. **Workshop:** Organizer of workshop: "Ultrasound Guided Vascular Access" February 25, 2011 CRRT
 53. **Workshop:** April 2013 International Symposium on Spine and Paravertebral Sonography for Anesthesia and Pain Medicine 2013 5th – 7th April 2013 Hong Kong, Postgraduate Education Centre, Prince of Wales Hospital The Chinese University of Hong Kong: Invited speaker
 54. **Workshop:** 8th Perioperative and Critical Care Transesophageal Echocardiography workshop at Advanced Cardiac Centre, PGIMER, Chandigarh: invited speaker 2014
 55. **Workshop:** 2nd Annual UPMC Perioperative and Critical Care Monitoring Conference September 6-7 2014. Invited speaker
 56. **Workshop:** UCSD Ultrasound Guided Regional Anesthesia Course November 1-2, 2014 course director and speaker.
 57. **Workshop:** 9th Transesophageal Echocardiography PGI Chandigarh February 28 2015
 58. **Workshop:** 10th Annual UCSD Ultrasound Guided Regional Anesthesia Course Oct 22-23, 2015 course director and speaker.
 59. **Workshop:** 10th Transesophageal Echocardiography PGI Chandigarh February 28 2016
 60. **Workshop:** 11th UCSD Annual USG Regional Anesthesia Course Nov 5-6,2016
Course Director & Speaker

61. **Workshop:** 11th Transesophageal Echocardiography PGI Chandigarh February 28 2017
62. **Workshop 12th Annual UCSD USG Regional Anesthesia Course , Nov4-5,2017**

Lectures and Demonstrations:

1. February 6, 2002 - *Use of Ultrasound in Peripheral Nerve Blocks*. Dept of Anesthesiology, New York University Medical Center, New York, NY
2. March 20, 2002 - *Use of Ultrasound for Peripheral Nerve Blocks*. Dept of Anesthesiology, University of California, Los Angeles, CA
3. June 13, 2002 - *Use of Ultrasound in Peripheral Nerve Blocks*. Dept of Anesthesiology Hospital for Special Surgery Cornell University, New York, NY
4. January 7, 2003 - Lecture and demonstration "*Use of ultrasound for infraclavicular block*" Department of Anesthesiology St. Barnabas Medical Center, Livingston, NJ.
5. January 16, 2003 - Lecture and demonstration "*Use of ultrasound for infraclavicular block.*" Department of Anesthesiology Virginia Commonwealth University - MCV Richmond, VA.
6. July 23-24, 2003 - Lecture and demonstration of Infraclavicular block in Department of Anesthesiology at Strong Memorial Hospital University of Rochester, Rochester, NY
7. August 13, 2003 - Lecture on *use of ultrasound for Vascular Access*. Department of Anesthesiology New York University School of Medicine, New York, NY.
8. November 3, 2003 - lecture on *Peripheral nerve blocks using Ultrasound*. Dept of Anesthesiology, Nassau County Medical Center, East Meadow, NY
9. March 10, 2004 - Lecture on *Ultrasound guided peripheral nerve blocks*. Department of Anesthesia. Auckland City Hospital, Auckland, New Zealand.
10. May 10, 2004 - Lecture at Cork University Hospital, Department of Anesthesia "*Ultrasound guided peripheral nerve blocks*", Cork, Ireland
11. September.15, 2004 - *Ultrasound guided peripheral nerve blocks*, lecture at department of anesthesia University of Medicine and Dentistry – New Jersey Medical School, Newark NJ
12. November 16, 2005 - *Ultrasound guided peripheral nerve blocks*, lecture at department of anesthesia, St. Vincent Hospital New York, NY.
13. January 4, 2006 - *Use of ultrasound for peripheral nerve blocks* Department of Anesthesiology, New York University Medical Center, New York, NY.
14. March 7, 2006 - *Use of Ultrasound for Peripheral Nerve Blocks*. Dept of Anesthesiology, University of California San Diego, CA.
15. March 8, 2006 - *Use of Ultrasound for vascular access*. Dept of Anesthesiology, University of California San Diego, CA.
16. April 26, 2006 - Lecture on *use of ultrasound for Vascular Access*. Department of anesthesiology, New York University School of Medicine, New York, NY
17. January 2007 - Annual UCSD anesthesia Update Ultrasound guided peripheral nerve blocks
18. January 2008 - UCSD anesthesia Update Workshop1: Ultrasound guidance for nerve blocks. Workshop 2: Ultrasound for vascular access
19. March 2008 - Lecture: *use of ultrasound for Vascular Access* Bogota, Colombia
20. March 2008 Lecture & demonstration: Use of ultrasound for lower extremity blocks. Bogota, Colombia
21. May 17, 2008 - Pro and con session; use of ultrasound for regional anesthesia.
22. May 29, 2008 - Visiting Professor Lecture "*Use of Ultrasound for Peripheral Nerve Blocks*". Dept of Anesthesiology, University of California Irvine, CA.
23. August 8, 2008 - Ultrasound guided nerve blocks and vascular access seminar cum workshop at Postgraduate Institute of Medical Education and Research Chandigarh, India.
24. September 20,2008 - University of Southern California Regional anesthesia course lecture Ultrasound guided blocks below clavicle
25. January 2009 - UCSD anesthesia Update lecture: introduction to Ultrasound imaging Workshop 1: Ultrasound guidance for nerve blocks. Workshop 2: Ultrasound for vascular access
26. March 2009 - International Anesthesia Research Society 83rd Annual Congress, organizer of Workshop: Ultrasound guided vascular access San Diego, CA
27. September 12 2009 - Southern California Kaiser Anesthesiology Symposium Ultrasound guidance for vascular access Ultrasound guidance for peripheral nerve blocks
28. November 6 - 7, 2009 - 5th Annual UCSD- NMC San Diego Regional Anesthesia Course

29. January 2010 - UCSD anesthesia Update
 - a. Workshop Peripheral Nerve blocks
 - b. Ultrasound guided vascular access workshop
30. March 2010 - International Anesthesia Research Society 84th Annual Congress, organizer of Workshop: Ultrasound guided vascular access Honolulu , HI
31. January 2011 - UCSD anesthesia Update
 - a. Workshop Peripheral Nerve blocks
 - b. Ultrasound guided vascular access workshop
32. March 26, 2011 - Course director :California Society of Anesthesiology Workshop "Ultrasound Guided Nerve blocks" Fresno CA Organizer & Keynote speaker
33. February 22 – 25, 2011 - The 16th International Conference on Continuous Renal Replacement Therapies, San Diego Organizer of workshop: " Ultrasound guided Vascular Access" February 25,2011 CRRT
34. November 6-7, 2011 - Course director UCSD –Naval med center 6th Intensive regional anesthesia course Lecture: 1. Deep cervical block, Lecture: 2. Infraclavicular block, Lecture: 3. Intercostal blocks
35. January 2012 - UCSD Anesthesia Update,
 - a. Workshop Peripheral Nerve blocks
 - b. Ultrasound guided vascular access workshop
36. February 2012- -The 17th International Conference on Continuous Renal Replacement Therapies Tuesday 14 - Friday 17 2012 San Diego CA February 17,2012 workshop "Ultrasound Guided Vascular Access"
37. March 1-2, 2013 - 7th Perioperative and Critical Care Transesophageal Echocardiography Workshop at Advanced Cardiac Centre , PGIMER, Chandigarh, India : invited speaker
38. March 17, 2013 - Use of Arterial Venous and Central Venous Cannulation, Post Graduate Institute of Medical Education & Research, Chandigarh, India
39. April 4-7 2013 - Sandhu, NS. Continuous Nerve Block Lecture, Chinese University of Hong Kong, Hong Kong, China
40. April 4-7 2013 - Sandhu, NS. Infraclavicular Block Lecture, Chinese University of Hong Kong, Hong Kong, China
41. April 5, 2013 - International Symposium on Spine and Paravertebral Sonography for Anaesthesia and Pain Medicine 2013 5th – 7th April 2013 Hong Kong, Postgraduate Education Centre, Prince of Wales Hospital The Chinese University of Hong Kong: Invited speaker
42. November 2013 - 8th Annual UCSD Ultrasound Guided Regional Anesthesia Course, San Diego
43. January 2014 - UCSD anesthesia Update: two workshops:
 - a. Ultrasound Guided Nerve Blocks
 - b. Ultrasound Guided Vascular Access
44. March 2014 - 8th Perioperative and Critical care Transesophageal Echocardiography Workshop at Advanced Cardiac Centre , PGIMER, Chandigarh, India : invited speaker
45. November 2014 - 9th Annual UCSD Ultrasound Guided Regional Anesthesia Course, San Diego
46. January 2015 - UCSD anesthesia Update: two workshops:
 - a. Ultrasound Guided Nerve Blocks
 - b. Ultrasound Guided Vascular Access
47. March 2015 - 9th Perioperative and Critical Care Transesophageal Echocardiography Workshop at Advanced Cardiac Centre , PGIMER, Chandigarh, India : invited speaker Ultrasound guided nerve workshop and cadaver workshop
48. October 2015 - 10th Annual UCSD Ultrasound Guided Regional Anesthesia Course: Course director
49. January 2016 - UCSD anesthesia Update two workshops:
 - a. Ultrasound Guided Nerve Blocks
 - b. Ultrasound Guided Vascular Access
50. March 2016 - 10th annual Perioperative and Critical Care Transesophageal Echocardiography Workshop at Advanced Cardiac Centre , PGIMER, Chandigarh, India : invited speaker
51. 2nd Ultrasound Guided Nerve Workshop and Cadaveric Workshop PGIMER, Chandigarh, India.

52. Nov 12-13, 2016. 11th Annual UCSD Ultrasound Guided Regional Anesthesia Course, San Diego
53. March 3-5, 2017 - 11th annual Perioperative and Critical Care Transesophageal Echocardiography Workshop at Advanced Cardiac Centre , PGIMER, Chandigarh, India : invited speaker
54. March 5-6, 2017. 3rd Annual Ultrasound Guided Nerve Workshop and Cadaveric Workshop PGIMER, Chandigarh, India. Course Director.
55. June 21, 2017 Lecture "Ultrasound guided vascular access **Carolina refresher course :“ 30th Annual update in Anesthesiology Critical care and Pain Medicine Kiawah Island, SC.**
56. June 23,2017 "Non plexus blocks of Upper extremity" **30th Annual Update in Anesthesiology Critical Care and Pain Medicine , Kiawah Island SC .**
57. Nov4-5, 2017 12th Annual UCSD Ultrasound Guided Regional Anesthesia Course, San Diego
58. Nov 6, 2017 : 2017 annual American College of Rheumatology & the Association of Rheumatology Health Professionals. Ultrasound guided nerve blocks and panelist on Ultrasound imaging .
59. Jan10, 2018. UCSD Annual Anesthesia Update: Ultrasound Guided Vascular Access Workshop.
60. Feb 25 - 26, 2018. 4th Annual Ultrasound Guided Nerve Workshop and Cadaveric Workshop PGIMER, Chandigarh, India.
61. Oct.6, 2018 Lecture "Regional anesthesia primer for PACU nurses . PANAC San Diego chapter meeting at Rady Childrens Hospital, San Diego

Training national and international Faculty in Use of Ultrasound for peripheral Nerve blocks

- 1 Dr. David Hardman, Assistant Professor, Duke university, Durham, NC visited for two days at Bellevue Hospital to observe and learn different peripheral nerve blocks using Ultrasonography
- 2 Dr Barry J Nicholls, Consultant, Taunton UK , December 4-5 2002
- 3 Dr Angus Pridie, Consultant, Newcastle UK , December 4-5 2002
- 4 Dr Graham Burt, Consultant, Nuffield Hospital, Oxford, UK, December 4-5, 2002
- 5 Dr Lieven Buyse, Genk, Belgium December 4th and 5th 2002.
- 6 Dr Pedro Ibbara and Dr Miguel, from Bogota, Columbia, December 11, 2002.
- 7 Dr. Thomas Reilley, Vice chairman & Associate Professor, Ohio State University, December 12, 2002
- 8 Dr. Xavier Sala- Blanch, from Barcelona Spain in December 2004.
- 9 Dr Benjamin Dragger, Chair Department of Anesthesiology at Hadassah, Israel.2004
- 10 Dr. Oivind Klastaad Consultant, University of Oslo, Norway, September 19- 23, 2005, October 3, 2005 on a scholarship to learn different nerve blocks using ultrasound.
- 11 Dr. Pedro Lira, Venezuela 2005
- 12 Patrick W. Clougherty, MD, Chairman, Department of Anesthesiology Dept of Anesthesiology VCU School of Medicine - Inova Campus, Falls Church, Virginia 22046
- 13 Dr. Jan Yuri Kazansky, University of Tromso, Norway, in August 2006.
- 14 Dr Peter Chang, MD, Riverside, CA. September 6, 2007.
- 15 Dr Chris Nixon, Auckland General Hospital, Auckland New Zealand 2014
- 16 Dr Robert Meintz, MD, Bay Area CA 2015
- 17 Dr. Justin Ko, Associate professor from Samsung Institute of Medical Science Seoul , South Korea April19,2016.

New Techniques:

1. Ultrasound Guided Infraclavicular Block and Placement of Continuous Catheter
 - This technique was developed and refined to increase the success rate of Brachial plexus block from 60 -90% by conventional techniques to nearly 100%.
 - It hastens the onset of block from 15-30 minutes to 6 minutes.
 - It decreases the dose of lidocaine from 7-10 mg/kg to 3-4 mg/kg.
 - It allows prolonged upper extremity surgery by accurately placed catheter for continuous block.
 - This was first presented at IARS Meeting, Ft. Lauderdale, FL, March 2001.
2. Ultrasound Guided imaging of Sciatic Nerve in Popliteal Fossa and Blocking it with Local Anesthetics
 - This was presented at IARS Meeting, in Ft. Lauderdale, FL, March, 2001.
3. Transpectoral axillary venous lines using ultrasound guidance
4. Transpectoral axillary artery catheterization using ultrasound.
5. Peripheral venous cannulation using ultrasound.
6. Ultrasound guided Proximal Radial artery cannulation as a rescue technique for failed radial cannulation at wrist.
7. Two Puncture ultrasound guided Elbow block
8. Modified wrist block
9. US guided metacarpal block

Commented [NS1]:

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