

CURRICULUM VITAE

Hariharan Shankar MD

Professor
Department of Anesthesiology
Division of Clinical

OFFICE ADDRESS:

VA Medical Center
5000 W National Ave
Milwaukee, WI 53295

FACULTY APPOINTMENTS:

10/2005 - 06/2010 Assistant Professor, Department of Anesthesiology, Medical College of Wisconsin, Milwaukee, WI
07/2010 - 06/30/2015 Associate Professor, Department of Anesthesiology, Medical College of Wisconsin, Milwaukee, WI
07/01/2015 - Present Professor, Anesthesiology, Pain Medicine, Medical College of Wisconsin

EDUCATIONAL ADMINISTRATIVE APPOINTMENTS:

07/2005 - 06/2009 Supervisor, PACU Anesthesia Resident Rotation, Zablocki VA Medical Center
07/2006 - 06/2007 Supervisor, Pain Medicine Residents & Fellows Education, Zablocki VA Medical Center
12/2008 - 06/2010 Associate Program Director, Pain Medicine Fellowship Program, Department of Anesthesiology, Medical College of Wisconsin
07/2010 - 06/2015 Program Director, Department of Anesthesiology, Pain Medicine Fellowship Program, Medical College of Wisconsin, Milwaukee, WI

HOSPITAL AND CLINICAL ADMINISTRATIVE APPOINTMENTS:

08/2010 - 07/2011 Interim Director, Pain Management Clinic, Clement Zablocki VA Medical Center, Milwaukee, WI
07/01/2011 - 02/2017 Director, Anesthesiology, Pain Medicine, Clement Zablocki VA Medical Center

SPECIALTY BOARDS AND CERTIFICATION:

<u>Board Certified</u>	<u>Issue Date</u>	<u>Expiration</u>
American Board of Anesthesiology	04/2006	04/2026
Sub-specialty Certification in Pain Medicine, American Board of Anesthesiology	09/2007	09/2027

<u>Certificates</u>	<u>Issued By</u>	<u>Issue Date</u>	<u>Expiration</u>
Certified Interventional Pain Sonologist	World Institute of Pain	01/2015	None
Fellowship in Interventional Pain Practice	World Institute of Pain	12/2015	None

<u>Licensure</u>	<u>Number</u>	<u>Issue Date</u>	<u>Expiration</u>
Wisconsin State License	44813-020	08/2002	10/2021

AWARDS AND HONORS:

- 06/2006 Best Pain Staff, Conferred by the Class of 2006 Anesthesiology
- 06/2007 Teacher of the Year, Conferred by the Class of 2007 Anesthesiology
- 06/2009 Teacher of the Year, Conferred by the Class of 2009 Anesthesiology
- 07/01/2010 - 06/30/2011 Outstanding Medical School Teacher, Teacher recognition pin, Medical College of Wisconsin
- 2011 - 2012 Outstanding Faculty Service Award, Medical College of Wisconsin
- 09/23/2019 - Present Lifetime Achievement Award in Pain management, Clement Zablocki VA Medical Center
- 2022 - Present Military/veterans administration coin, Veterans affairs primary care national leads

MEMBERSHIPS IN HONORARY AND PROFESSIONAL SOCIETIES:

- 10/1992 - Present Indian Society of Anesthesiologists (Life Member)
- 07/2002 - Present American Society of Anesthesiology (Member)
- 09/2004 - Present American Society of Regional Anesthesia and Pain Medicine (Member)
- 01/2006 - Present Wisconsin Society of Anesthesiologists (Member)
- 01/2007 - 01/2013 Milwaukee Society of Anesthesiologists (Member)
- 2007 - Present Special Interest Group on Ultrasound in Pain Medicine, American Society of Regional Anesthesia and Pain Medicine (Founding member)
- 07/2010 - Present Society of Academic Anesthesiology Program Directors (Member)
- 02/2011 - Present Indian Society for the Study of Pain (Life Member)

EDITORSHIPS/EDITORIAL BOARDS/JOURNAL REVIEWS:

Editorial Board

- 07/2011 - 2021 Case Reports in Anesthesiology
- 10/2011 - 2015 Anesthesiology and Pain Medicine
- 12/2012 - 2017 Medical Journal Dr D Y Patil University
- 07/2019 - Present Regional Anesthesia and Pain Medicine

Journal Review

- 04/2008 - Present Pain Practice
- 01/2009 - 2010 Journal of Clinical Anesthesia
- 07/2009 - 2010 Anesthesiology
- 12/2009 - Present Local and Regional Anesthesia
- 05/2010 - Present Journal of Pain Research
- 07/2010 - 2016 Indian Journal of Anaesthesia
- 06/2011 - Present Journal of Medical Research
- 07/2012 - 2018 Medical Journal of Dr. D.Y. Patil University
- 12/2012 - 2013 Experimental Brain Research
- 2012 - Present Regional Anesthesia and Pain Medicine
- 2012 - Present Journal of Ultrasound in Medicine
- 01/2013 - Present Pain Medicine
- 06/2013 - Present Journal of Vascular and Interventional Radiology
- 07/2013 - Present PLOS ONE
- 11/2013 - Present Pain
- 03/2016 - Present Anesthesia & Analgesia

Ad-Hoc Reviewer

- 04/2014 - Present BMC Research Notes

NATIONAL ELECTED/APPOINTED LEADERSHIP AND COMMITTEE POSITIONS:

- 2009 - 2016 Question Writer, Self-Education and Evaluation Program, American Society of Anesthesiologists
- 2011 - 2012 Member, Scientific/Education Planning Committee, 2012 American Society of Regional and Anesthesia 11th Annual Pain Medicine meeting
- 2012 - Present Question author, Pain Medicine subspecialty, American Board of Anesthesiology
- 2013 - 2016 Co-Organizer, Pain Medicine Workshops, Annual Meeting,, American Society of Anesthesiologists

2013 - 2019 Member, Educational Track Subcommittee on Pain Medicine, American Society of Anesthesiologists

2013 - 2015 Member, Subgroup on Advanced Diagnostics and Interventions, National VA

2013 - 2015 Member, Abstract Review Subcommittee, American Society of Anesthesiologists

2015 - 2016 Member, Scientific/Educational Planning Committee, American Society of Regional Anesthesia and Pain Medicine

2015 - 2017 Examiner, CIPS examination, World Institute of Pain

2015 - 2021 Faculty Advisor, Pain medicine, ASRA Resident Section committee, American Society of Regional Anesthesia and Pain Medicine

2016 - 2021 Member, Scientific/Educational Planning Committee, American Society of Regional Anesthesia and Pain Medicine

2018 - 2022 Member-at-Large, Faculty Development Committee, American Society of Regional Anesthesia and Pain Medicine

2020 - 2024 Member, Pain Medicine Examination Committee, American Board of Anesthesiology

2022 - 2024 Member, CME Committee, American Society of Regional Anesthesia and Pain Medicine

2022 - 2025 Member, Distinguished Service Award Committee, American Society of Regional Anesthesia and Pain Medicine

2022 - 2024 Vice Chair, Pain medicine examination committee, American Board of Anesthesiology

INVITED LECTURES/WORKSHOPS/PRESENTATIONS:

International

H Shankar, "Teach the Teachers Expert meeting", Intensive Cadaver Workshop, Founding fathers of the Special Interest Group on Ultrasound in Pain Medicine, American Society of Regional Anesthesia and Pain Medicine, Innsbruck, Austria, 05/15/2009 - 05/17/2009

H Shankar, "Headache: Diagnosis and Management of Primary Headache Disorders", New York Society of Regional Anesthesia World Anesthesia Congress, Dubai, 03/08/2010 - 03/12/2010

H Shankar, "The Use of Ultrasound Guidance in Pain Medicine" Refresher Course Lecture, New York Society of Regional Anesthesia World Anesthesia Congress,, Dubai, Emirates, 03/08/2010 - 03/12/2010

H Shankar, "Ultrasound Guided Pain Blocks" Workshop,, New York Society of Regional Anesthesia World Anesthesia Congress, Dubai, Emirates, 03/08/2010 - 03/12/2010

H Shankar, "Future applications of Ultrasound", 7th Annual International Symposium of Ultrasound for Regional Anesthesia, Toronto, Canada, 06/05/2010 - 06/07/2010

H Shankar, "Ultrasound guidance: how can safety be compromised?", 26th Annual National Conference of Indian Society for Study of Pain, Chandigarh, India, 02/18/2011 - 02/20/2011

H Shankar, "Applications of ultrasound for pain practice in the horizon", 26th Annual National Conference of Indian Society for Study of Pain, Chandigarh, India, 02/18/2011 - 02/20/2011

H Shankar, " Ultrasound Guided Ankle Blocks for Fore foot surgery ", International Symposium on Spine and Paravertebral Sonography for Anaesthesia and Pain Medicine 2011, Hong Kong, 03/18/2011 - 03/20/2011

H Shankar, " Sacral Spine and Sacroiliac Joint Imaging for Chronic Pain Interventions ", International Symposium on Spine and Paravertebral Sonography for Anaesthesia and Pain Medicine 2011, Hong Kong, 03/18/2011 - 03/20/2011

H Shankar, Faculty, Workshop on Ultrasound imaging in Pain Medicine,, 27th Annual National Conference of Indian Society for Study of Pain, Bangaluru, India, 02/18/2012 - 02/20/2012

H Shankar, "Novel Applications of ultrasound in pain medicine", 4th International Symposium of Spine and Paravertebral Sonography, Hong Kong, 03/28/2012 - 04/01/2012

H Shankar, " Joint examination and injection for Pain Medicine" Workshop, 4th International Symposium of Spine and Paravertebral Sonography, Hong Kong, 04/01/2012

H Shankar, "Cervical Spine and paravertebral sonography", Spinal sonography symposium, Association of Anesthetists of Great Britain and Ireland April 5th, London, United Kingdom, 04/05/2012

H Shankar, "Knee and myofascial pain" Workshop, 9th Annual International Symposium of Ultrasound for Regional Anesthesia, Toronto, Canada, 06/05/2012 - 06/07/2012

H Shankar, SI joint, caudal & sacral nerve root injection, International symposium on Ultrasound for regional anesthesia and pain medicine, Toronto, Canada, 06/05/2012 - 06/07/2012

H Shankar, Ultrasound guidance for Neurablation and spinal cord stimulator, International Symposium for Ultrasound in regional anesthesia and pain medicine, Toronto, Canada, 06/05/2012 - 06/07/2012

H Shankar, "Ultrasound Guidance for Sympathetic Blocks: From Cervical to Ganglion Impar", 4th International Symposium of Spine and Paravertebral Sonography, Hong Kong, 04/05/2013

H Shankar, "Ultrasound guidance for hip and knee injections" Workshop faculty, 4th International Symposium of Spine and Paravertebral Sonography, Hong Kong, 04/05/2013 - 04/07/2013

H Shankar, "Ultrasound Imaging of the Cervical Spine and Injection Techniques", 4th International Symposium of Spine and Paravertebral Sonography, Hong Kong, 04/05/2013 - 04/07/2013

H Shankar, "Ultrasound Guidance for Sympathetic Blocks: From Cervical to Ganglion Impar", Annual meeting, Korean Pain Society., Seoul, Korea, 11/15/2013 - 11/17/2013

Truncal Blocks, 10th Annual International Symposium of Ultrasound in Regional Anesthesia, Toronto, Canada, 06/21/2014 - 06/23/2014

Headache Blocks, 10th Annual International Symposium of Ultrasound for Regional Anesthesia, Toronto, Canada, 06/21/2014 - 06/23/2014

Low Back Pain Blocks, 10th Annual International Symposium of Ultrasound In Regional Anesthesia, Toronto, Canada, 06/21/2014 - 06/23/2014

Ultrasound Guided Sympathetic Blocks For Pain Medicine, 5th International Symposium of Spine and Paravertebral Sonography, Hong Kong, 10/30/2014 - 11/02/2014

Ultrasound Related Biological Effects: Are there any Potential Adverse and Safety Issues?, 5th International Symposium of Spine and Paravertebral Sonography, Hong Kong, 10/30/2014 - 11/02/2014

Common Ultrasound Guided Head and Neck Blocks for Pain Medicine, 5th International Symposium of Spine and Paravertebral Sonography, Hong Kong, 10/30/2014 - 11/02/2014

Cervical Spine Imaging, 5th International Symposium of Spine and Paravertebral Sonography, Hong Kong, 10/30/2014 - 11/02/2014

Shankar H, Intrathecal pump placement workshop, World Congress of Regional Anesthesia and Pain Techniques, Cape Town, South Africa, 11/2014

Shankar H, Musculoskeletal Ultrasound Imaging of the Shoulder and Elbow Joints and Injection techniques, World Congress of Regional Anesthesia and Pain Techniques, Cape Town, South Africa, 11/2014

H Shankar, Musculoskeletal Ultrasound Imaging of the Hip and Knee Joints and Injection techniques, World Congress of Regional Anesthesia and Pain Techniques, Cape Town, South Africa, 11/2014

Shankar H, Ultrasound basics: Principles of image documentation and sterility, 6th International Evidence-based Interventional Pain Medicine Symposium - WIP BENELUX 2015, Maastricht, Netherlands, 06/2015

Shankar H, Ultrasound Related Biological Effects: Are there any Potential Adverse and Safety Issues?, 6th International Symposium of Spine and Paravertebral Sonography, Hong Kong, 10/30/2015 - 11/02/2015

Shankar H, Ultrasound Imaging for Suprascapular nerve, Piriformis muscle and Pudendal Nerve Injection, 6th International Symposium of Spine and Paravertebral Sonography, Hong Kong, 10/30/2015 - 11/02/2015

Shankar H, Common Ultrasound Guided Head and Neck Blocks for Pain Medicine, 6th International Symposium of Spine and Paravertebral Sonography, Hong Kong, 10/30/2015 - 11/02/2015

Shankar H, Ultrasound Guided Injections of the Lumbar Spine for Pain Medicine, 6th International Symposium of Spine and Paravertebral Sonography, Hong Kong, 10/30/2015 - 11/02/2015

Shankar H, Ultrasound Guidance for Sympathetic Blocks: From Cervical to Ganglion Impar, 1st International Congress on Spinal Pain, Gwangju, South Korea, 05/26/2016 - 05/29/2016

Shankar H, Ultrasound Related Biological Effects: Are there any Potential Adverse and Safety Issues?, 1st International Congress on Spinal Pain, Gwangju, South Korea, 05/26/2016 - 05/29/2016

Shankar H, Ultrasound Imaging of the Sacrum and Injection Techniques, 7th International Symposium of Spine and Paravertebral Sonography, Hong Kong, 08/26/2016 - 08/27/2016

Shankar H, Common Ultrasound Guided Head and Neck Blocks for Pain Medicine, 7th International Symposium of Spine and Paravertebral Sonography, Hong Kong, 08/26/2016 - 08/27/2016

Shankar H, Upper Extremity Sonoanatomy, 21st Advanced Interventional Pain Conference and Practical Workshop, Budapest, Hungary, 08/29/2016 - 08/31/2016

Shankar H, Advanced Interventions for Headache and Neck pain, Taiwan Pain Society annual meeting, Kaohsiung, Taiwan, 03/04/2017 - 03/05/2017

Shankar H, Ultrasound Guided Sympathetic blocks, Taiwan Pain Society annual meeting, Kaohsiung, Taiwan, 03/04/2017 - 03/05/2017

Shankar H, Upper Extremity Sonoanatomy, 21st Advanced Interventional Pain Conference and Practical Workshop, World Institute of Pain, Nijmegen, Netherlands, 06/06/2017 - 06/10/2017

Shankar H, MSK workshop, 1st Annual Ultrasound in Interventional Pain & Musculoskeletal Procedures Symposium, King's College Guys Campus, London, United Kingdom, 12/01/2017 - 12/03/2017

Shankar H, Ultrasound Guided Sympathetic Blocks: From Cervical to Ganglion Impar, 9th International Symposium of Spine and Paravertebral Sonography, Hong Kong, 01/26/2018 - 01/28/2018

Shankar H, Ultrasound Imaging of the Cervical Spine and Paravertebral Region and Injection Techniques, 9th International Symposium of Spine and Paravertebral Sonography, Hong Kong, 01/26/2018 - 01/28/2018

Shankar H, Ultrasound Guided Interventions in Regenerative Medicine, World Congress on Regional Anesthesia and Pain Medicine, New York, New York, 04/18/2018 - 04/21/2018

Shankar H, Basic Ultrasound Guided Pain Procedures, World Congress on Regional Anesthesia and Pain Medicine, New York, New York, 04/18/2018 - 04/21/2018

Shankar H, Ultrasound for Spine Pain Procedures, World Congress on Regional Anesthesia and Pain Medicine, New York, New York, 04/18/2018 - 04/21/2018

H Shankar, "Ultrasound Imaging of the Cervical Spine and Injection Techniques, ISSPS, Webinar, 09/14/2021

National

H Shankar,, "Pharmacologic Management of Cancer Pain", Pain Management in the Palliative Care Setting, North Chicago, Illinois, 03/2005

H Shankar, Workshop on "Ultrasound Guided Needle Placements", Annual Meeting, American Society of Anesthesiologists,, Orlando, Florida, 10/2008

H Shankar, Moderator and Speaker, Panel on "Future of Image Guidance in Pain Medicine", Annual Meeting, American Society of Anesthesiologists, Orlando, Florida, 10/2008

H Shankar, Panel on "Ultrasound Guided Procedures in Pain Medicine", Annual Meeting, American Society of Anesthesiologists,, Orlando, Florida, 10/2008

H Shankar, Workshop on "Peripheral Nerve Blocks with Ultrasound" Annual Meeting, American Society of Anesthesiologists, New Orleans, Louisiana, 10/2009

H Shankar, Workshop on "Head and Neck Blocks", Annual Meeting, American Society of Regional Anesthesia and Pain Medicine,, San Antonio, Texas, 11/2009

H Shankar, Workshop on "Chronic Pain Nerve Blocks with Ultrasound Guidance" Annual Meeting, American Society of Regional Anesthesia and Pain Medicine, San Antonio, Texas, 11/2009

H Shankar, "Ultrasound Guidance for Pain Interventions", Department of Anesthesiology, University of Southern California,, Los Angeles, California, 05/2010

H Shankar, Workshop on "Peripheral Nerve Blocks with Ultrasound" Annual Meeting, American Society of Anesthesiologists, San Diego, 10/2010

H Shankar, "Ultrasound guided Interventional Pain Procedures", Ultrasound Guided Regional Anesthesia and Interventional Pain Medicine Symposium, Long Beach, California, 01/2011

H Shankar, Workshop on "Ultrasound guided Interventional Pain Procedures", Ultrasound Guided Regional Anesthesia and Interventional Pain Medicine Symposium, Long Beach, California, 01/2011

H Shankar, "Applications of Ultrasound Imaging in the Horizon", Grand Rounds Lecture, University of California, Irvine, California, 03/2011

H Shankar, Hip and Knee injections, " Excellence in Pain Management Workshops: Ultrasound Techniques" Boston, Boston, Massachusetts, 06/2011

H Shankar, "Shoulder, Hip, Knee and Wrist joints scan", Excellence in Pain Management Workshops: Ultrasound Techniques, Chicago, Illinois, 09/2011

H Shankar, "Occipital, Suprascapular & Piriformis Sonoanatomy", Excellence in Pain Management Workshops: Ultrasound Techniques, Chicago, Illinois, 09/2011

H Shankar, Workshop on "Peripheral Nerve Blocks with Ultrasound", Annual Meeting, American Society of Anesthesiologists, Chicago, Illinois, 10/2011

H Shankar, "Ultrasound guidance in pain medicine" Resident Workshop, Annual Meeting, American Society of Regional Anesthesia and Pain Medicine, New Orleans, Louisiana, 11/2011

H Shankar, Interventional Pain Management Techniques Using Fluoroscopic Guidance and Ultrasound, Cadaver workshop, Dannemiller foundation, San Antonio, Texas, 11/2011

H Shankar, Workshop on "Ultrasound Guided Peripheral nerve blocks", Annual Meeting, American Society of Regional Anesthesia and Pain Medicine, New Orleans, Louisiana, 11/2011

H Shankar, "Musculoskeletal: Hip and Knee joints" Special session Workshop on Ultrasound in pain medicine, Annual Meeting, American Society of Regional Anesthesia and Pain Medicine,, New

Orleans, Louisiana, 11/2011

H Shankar, Workshop on "Ultrasound Guided Large joint injections", Annual Meeting, American Society of Regional Anesthesia and Pain Medicine, New Orleans, Louisiana, 11/2011

H Shankar, Workshop on "Chronic Pain Nerve Blocks with Ultrasound Guidance" Annual Meeting, American Society of Regional Anesthesia and Pain Medicine, New Orleans, Louisiana, 11/2011

H Shankar, "Sonoanatomy of Neck", Pain clinic, University of California,, San Francisco, California, 05/2012

H Shankar, Spinal Stenosis – Diagnosis and Treatment, 29th Annual Pain Symposium, Lubbock, Texas, 06/2012

H Shankar, "Paravertebral and intercostals blocks", NYSORA Symposium, New York, New York, 09/2012

H Shankar, "Piriformis and intercostals blocks", NYSORA Symposium, New York, New York, 09/2012

H Shankar, "Basic Peripheral Nerve/muscle Blocks with Ultrasound" Workshop, Annual Meeting, American Society of Anesthesiologists, Washington DC, 10/2012

H Shankar, Moderator and Faculty "Joint injections: Fluoroscopic and Ultrasound cadaver workshop"Workshop, Annual Meeting, American Society of Anesthesiologists,, Washington DC, 10/2012

H Shankar, "Musculoskeletal applications - Hip and Knee Joints" Special Session Workshop on Ultrasound in Pain Medicine, Annual Meeting, American Society of Regional Anesthesia and Pain Medicine, Miami, Florida, 11/2012

H Shankar, "Ultrasound Guided Peripheral nerve blocks" Workshop, Annual Meeting, American Society of Regional Anesthesia and Pain Medicine, Miami, Florida, 11/2012

H Shankar, "Hands-On Ultrasound Workshop" Resident and Fellow "Boot camp", Annual Meeting, American Society of Regional Anesthesia and Pain Medicine, Miami, Florida, 11/2012

H Shankar, "Triaging Pain Patients", Annual Meeting, American Society of Regional Anesthesia and Pain Medicine, Miami, Florida, 11/2012

H Shankar, "Cervical sonoanatomy and injection techniques", Interventional Pain Management Techniques Using Fluoroscopic Guidance and Ultrasound, Dannemiller cadaver course, San Antonio, Texas, 03/2013

H Shankar, Organizing faculty, 'Workshop on common ultrasound guided techniques for the Pain Practitioner', 30th Annual Pain Symposium, Lubbock, Texas, 06/2013

H Shankar, 'Ultrasound Guidance for the Pain Practitioner', 30th Annual Pain Symposium, Lubbock, Texas, 06/2013

H Shankar, 'Ultrasound Guidance for the Pain Practitioner', Annual meeting, Connecticut Society of Anesthesiologists, Rocky Hill, Connecticut, 09/2013

H Shankar, "Ultrasound and Fluoroscopy Guided Procedures: Where (not) to Place the Needle", Annual meeting, American Society of Anesthesiologists, San Francisco, California, 10/2013

H Shankar, Moderator, "Ultrasound guidance for Pain Interventions: Basic" Workshop, Annual Meeting, American Society of Anesthesiologists, San Francisco, California, 10/2013

H Shankar, Moderator, "Ultrasound guidance for Pain Interventions: Advanced" Workshop, Annual meeting, American Society of Anesthesiologists, San Francisco, California, 10/2013

H Shankar, "Special Session Workshop: Musculoskeletal Applications - the Knee", Annual Meeting, American Society of Regional Anesthesia and Pain Medicine,, Phoenix, Arizona, 11/2013

H Shankar, "Hands on Ultrasound workshop", Annual meeting, American Society of Regional Anesthesia and Pain Medicine, Phoenix, Arizona, 11/2013

H Shankar, "Ultrasound Guided Peripheral nerve blocks", Annual Meeting, American Society of Regional Anesthesia and Pain Medicine, Phoenix, 11/2013

H Shankar, 'Ultrasound Guidance for the Pain Physician', Annual Meeting, American Academy of Pain Medicine, Phoenix, Arizona, 03/2014

H Shankar, 'Spinal Stenosis: Diagnostic Dilemmas and Management Controversies', Blaustein Pain Grand Rounds, Johns Hopkins University, Baltimore, Maryland, 04/2014

Shankar H, Occipital, Suprascapular, Intercostal and Abdominal wall Sonoanatomy, ASRA Cadaver course for Pain Medicine and MSK Ultrasound, Chicago, Illinois, 05/2014

Shankar H, Hand and Foot scan, ASRA Cadaver course for Pain Medicine and MSK Ultrasound, Chicago, Illinois, 05/2014

Shankar H, Workshop on common ultrasound guided techniques for the Pain Practitioner, 30th Annual Pain Symposium, Lubbock, Texas, 06/2014

Shankar H, Ultrasound Guidance for the Pain Practitioner, 30th Annual Pain Symposium, Lubbock, Texas, 06/2014

Shankar H, Ultrasound Guided Injections- Basic Techniques, Annual Meeting, American Society of Anesthesiologists, New Orleans, LA, 10/2014

Shankar H, Complications in Pain Medicine and Preventive Strategies, Annual Meeting, American Society of Anesthesiologists, New Orleans, LA, 10/2014

Shankar H, Sonoanatomy for Myofascial Pain: Can We See Trigger Points?, , Annual Meeting, American Society of Regional Anesthesia and Pain Medicine, San Francisco. CA, 11/2014

Shankar H, Lumbar Spine Sonoanatomy and Lumbar Medial Branches, Annual Meeting, American Society of Regional Anesthesia and Pain Medicine, San Francisco, CA, 11/2014

Shankar H, US Guided Plexus and Peripheral Nerve Blocks, Annual Meeting, American Society of Regional Anesthesia and Pain Medicine, San Francisco, CA, 11/2014

Shankar H, Sacroiliac Joint, Piriformis and Caudal Sonoanatomy, Annual Meeting, American Society of Regional Anesthesia and Pain Medicine, San Francisco, CA, 11/2014

Shankar H, Celiac Plexus, , Annual Meeting, American Society of Regional Anesthesia and Pain Medicine, San Francisco, CA, 11/2014

Shankar H, Ultrasound safety and risk, 1st International Ultrasound in Pain Medicine Congress,, Miami, FL, 01/2015

Shankar H, Current Status of Ultrasound Education in Residency and Fellowship Programs, 1st International Ultrasound in Pain Medicine Congress,, Miami, FL, 01/2015

Shankar H, Ultrasound Guided Periprocedural/Regional Procedures, Annual Meeting, American Academy of Pain Medicine, Washington, DC, 03/2015

Shankar H, Interventional Pain Management Techniques Using Fluoroscopic Guidance and Ultrasound, Dannemiller cadaver course, San Antonio, TX, 03/2015

Shankar H, CTS and plantar fasciitis sonoanatomy, ASRA Cadaver course for Pain Medicine and MSK Ultrasound, Chicago, IL, 06/2015

Shankar H, Suprascapular, Greater Occipital and Abdominal wall sonoanatomy, ASRA Cadaver course for Pain Medicine and MSK Ultrasound, Chicago, IL, 06/2015

Shankar H, PAIN BIOSKILLS LAB - Ultrasound Guided Blocks of the Trunk and Major Joints (Live models) for chronic pain, Annual Meeting, American Society of Anesthesiologists, San Diego, CA, 10/2015

Shankar H, Special Session Workshop: Sacroiliac Joint, Piriformis, and Caudal Sonoanatomy, Annual Meeting, American Society of Regional Anesthesia and Pain Medicine, Miami, FL, 11/2015

Shankar H, Special Session Workshop: Principles of Ultrasonography, Annual Meeting, American Society of Regional Anesthesia and Pain Medicine, Miami, FL, 11/2015

Shankar H, Advanced Ultrasound for Musculoskeletal and Sports Medicine: Scanning Protocol and MSK Interventions for the Knee, Annual Meeting, American Society of Regional Anesthesia and Pain Medicine, Miami, FL, 11/2015

Shankar H, Musculoskeletal Ultrasound: Lower Extremity, Annual Meeting, American Academy of Pain Medicine, Palm Springs, CA, 02/2016

Shankar H, Interventional Pain Management Techniques Using Fluoroscopic Guidance and Ultrasound, Dannemiller cadaver course, San Antonio, TX, 03/2016

Shankar H, PAIN BIOSKILLS LAB - Ultrasound Guided Blocks for Large Joints (Live models): Nerve Blocks and Intraarticular Injections, Annual Meeting, American Society of Anesthesiologists, Chicago, IL, 10/2016

Shankar H, Ankle and Foot Scan, Annual Meeting, American Society of Regional Anesthesia and Pain Medicine, San Diego, CA, 11/2016

Shankar H, Ultrasound and Fluoroscopic Techniques for Treating Soft Tissue Injuries, Annual Meeting, American Society of Regional Anesthesia and Pain Medicine, San Diego, CA, 11/2016

Shankar H, Applications in the Thoracic and Lumbar Spine: Facet, Epidurals, Paravertebral, Nerve Roots, MB, Annual Meeting, American Society of Regional Anesthesia and Pain Medicine, San Diego, CA, 11/2016

Shankar H, Sympathetic blocks from stellate to ganglion impar. What can ultrasound offer?, 2nd International Ultrasound in Pain Medicine Congress, Miami, FL, 01/2017

Shankar H, Interventional Pain Management Techniques Using Fluoroscopic Guidance and Ultrasound, Dannemiller cadaver course, San Antonio, TX, 03/2017

Shankar H, PAIN BIOSKILLS LAB - Ultrasound Guided Blocks for Large Joints, Annual Meeting, American Society of Anesthesiologists, Boston, MA, 10/2017

Shankar, H, Matching into Your Top Pain Medicine Fellowship: Strategies for Success, PBLD, Annual

Meeting, American Society of Regional Anesthesia and Pain Medicine, Orlando, FL, 11/2017

Shankar H, MSK ultrasound, Annual Meeting, American Society of Regional Anesthesia and Pain Medicine, Orlando, FL, 11/2017

Shankar H, Resident/Fellow Ultrasound Workshop, Annual Meeting, American Society of Regional Anesthesia and Pain Medicine, Orlando, FL, 11/2017

Shankar H, MSK Ultrasound, Special Session Ultrasound Workshop, Annual meeting, American Society of Regional Anesthesia and Pain Medicine, Orlando, FL, 11/2017

Shankar H, MR Neurography vs. Ultrasound for Peripheral Nerve Surgery, Annual Meeting, American Association of Neurological Surgeons, New Orleans, LA, 04/2018

Shankar H, Small Group Moderator, "Tackling the Opioid Crisis: Implementation Strategies to Take Home", Annual Meeting, American Society of Anesthesiologists, San Francisco, CA, 10/2018

Shankar H, PAIN BIOSKILLS LAB - Ultrasound Guided Blocks for Large Joints, Annual Meeting, American Society of Anesthesiologists, San Francisco, CA, 10/2018

Shankar H, Refresher Course lecture, "Perioperative Imaging and Pain Medicine: Patient Safety and Biological Effects of Ultrasound", Annual Meeting, American Society of Anesthesiologists, San Francisco, CA, 10/2018

Shankar H, Peripheral Nerve Stimulation and Ultrasound Neurography, Annual Meeting, American Society of Regional Anesthesia and Pain Medicine, San Antonio, TX, 11/2018

Shankar H, Advances in Ultrasound, MSK, and Novel Nerve Blocks, Annual Meeting, American Society of Regional Anesthesia and Pain Medicine, San Antonio, TX, 11/2018

Shankar H, PBLD, "Matching into Your Top Pain Medicine Fellowship: Strategies for Success, Peripheral Nerve Stimulation and Ultrasound Neurography, San Antonio, TX, 11/2018

Shankar H, Ultrasound in Pain Medicine II, Annual Meeting, American Society of Regional Anesthesia and Pain Medicine, San Antonio, TX, 11/2018

Shankar H, Simplifying Sonoanatomy: Cervical Spine, Grand Rounds, Texas Tech University Pain medicine division, Lubbock, TX, 01/2019

Shankar H, Ultrasound in Pain Medicine: Caudal, Annual Meeting, American Society of Regional Anesthesia and Pain Medicine, New Orleans, LA, 11/2019

Shankar H, Truncal Intermuscular Pain Blocks For Pain Mgmt, Annual Meeting, American Society of Regional Anesthesia and Pain Medicine, New Orleans, LA, 11/2019

Shankar H, So You Want To Be A Pain Fellow? Strategies for Matching Into Your Top Pain Medicine Program - PBLD, Annual Meeting, American Society of Regional Anesthesia and Pain Medicine, New Orleans, LA, 11/2019

Shankar H, Sonoanatomy and Hands-on Ultrasound Workshop, Annual Meeting, American Society of Regional Anesthesia and Pain Medicine, New Orleans, LA, 11/2019

Shankar H, Advanced Musculoskeletal Ultrasound for Pain Medicine, Annual Meeting, American Society of Regional Anesthesia and Pain Medicine, New Orleans, LA, 11/2019

H Shankar, "Challenges in Caring for Patients with Chronic Pain: Expression, Impression, and Compassion: Treating Chronic Pain Patients at 2 and 22 Years of Practice", Annual meeting, American Society of Regional Anesthesia and Pain Medicine, Virtual meeting (Zoom), 11/2020 - 2020

H Shankar, "Bedside Pain Procedures: Ultrasound Guidance for Spinal, Axial Joints and Paraspinal Blocks for Acute and Chronic Pain", American Society of Anesthesiologists annual meeting, San Diego CA, 10/2021 - 2021

H Shankar, "Bedside Pain Procedures: Ultrasound Guidance for Spinal, Axial Joints and Paraspinal Blocks for Acute and Chronic Pain"., American Society of Anesthesiologists annual meeting, San Diego, 2021

H Shankar, Moderator, "Chronic Pain in Pediatrics: Current Science and Integrative Practice", Annual Meeting, American Society of Regional Anesthesia and Pain Medicine, San Francisco, 2021

H Shankar, Moderator, "Sonoanatomy and Hands-On Ultrasound" Resident/Fellow Workshop, Annual Meeting, American Society of Regional Anesthesia and Pain Medicine,, San Francisco, CA, 2021

H Shankar, Moderator, "Infusion therapy in Chronic pain: A Practical Approach Ask the Experts session", Annual Meeting, American Society of Regional Anesthesia and Pain Medicine, San Francisco, 2021

Regional

H Shankar, "What, When & Where to Refer", Video telephone conference for Primary care providers, Iron Mountain, Michigan, 10/2006

H Shankar, Speaker, "Ultrasound Guidance in Chronic Pain Interventions", Wisconsin Society of Anesthesiologists Annual Meeting, Wisconsin, 09/2009

H Shankar, "Quo Vadis with Ultrasound Guidance", Milwaukee Society of Anesthesiologists Meeting, Milwaukee, 06/2010

H Shankar, "Ultrasound Guidance: Can we assume safety?", Wisconsin Society of Anesthesiologists Annual Meeting, Wisconsin, 09/2010

Local

H Shankar, "Pharmacologic Management of Pain" Pain Management for Primary care providers, VA Medical Center, Milwaukee, 09/2005

H Shankar, "What, When & Where to Refer", Pain Management for Primary care providers, VA Medical Center, Milwaukee, 09/2006

H Shankar, "Limb Pain in the Amputee", Grand Rounds Lecture, VA Medical Center, Milwaukee, 09/2007

H Shankar, "Current Advances in Pain Management", Brain Injury Awareness Week, Clement Zablocki VA Medical Center, Milwaukee, 03/2008

H Shankar, "Ultrasound Guidance: Can We Assume Safety?", Grand Rounds Lecture, Department of Anesthesiology, Medical College of Wisconsin, 04/2009

H Shankar, "Ultrasound Guidance in Obstetric Epidural Analgesia", Lecture demonstration/ tutorial, Department of Anesthesiology, St. Joseph's Hospital, 09/2009

H Shankar, "Post operative Pain Management in Neurosurgery", Grand Rounds, Dept. of Neurosurgery, Medical College of Wisconsin, 03/2012

Shankar H, Common Ultrasound Guided Head and Neck Blocks, Grand Rounds Lecture, Department of Neurology, Medical College of Wisconsin, 12/2014

Shankar H, Ultrasound Guided Pain Interventions, Grand Rounds lecture, Department of PM&R, Medical College of Wisconsin, 04/2017

PEER REVIEWED WORKSHOPS/PRESENTATIONS:

National

H Shankar, "Diagnosis and Treatment of Phantom Pain and Residual Limb Pain", Problem Based Learning Discussion, Annual meeting, American Society of Anesthesiologists, San Francisco, 10/2007

H Shankar, "Ultrasound Guidance in Chronic Pain", Problem Based Learning Discussion, Annual meeting, American Society of Regional anesthesia and pain medicine, San Antonio, 11/2009

COMMITTEE SERVICE:

Medical College of Wisconsin

2005 - 2015 Member, Pain Medicine Fellowship Selection Committee, Department of Anesthesiology, Medical College of Wisconsin

2005 - 2009 Member, Acute Pain Task Force, Department of Anesthesiology, Medical College of Wisconsin

2005 - 2015 Member, Resident Selection Committee, Department of Anesthesiology, Medical College of Wisconsin

2007 - 2015 Member, Education Committee, Department of Anesthesiology, Medical College of Wisconsin

2009 - 2012 Member, Library Committee, Medical College of Wisconsin

2010 - Present Member, Internal Review Committee/ Program Review Subcommittee, GMEC, Medical College of Wisconsin

2011 - 2021 Member, Appeals Committee, Graduate Medical Education, Medical College of Wisconsin

2012 - 2021 Member, Clinical Competency Committee, Anesthesiology, Medical College of Wisconsin

2014 - 2015 Member, Milestones Committee, Anesthesiology, Medical College of Wisconsin

2014 - 2017 Member, Library Committee, Medical College of Wisconsin

2019 - Present Member, Education Committee, Anesthesiology

05/2021 - Present Member, Academy of Faculty mentors, Dept. of Anesthesiology, Dept. of Anesthesiology, MCW

Hospital

2010 - 2023 Member, Human Studies Subcommittee, Institutional Review Board, Zablocki VA Medical Center

MCW TEACHING ACTIVITIES:

Resident and Fellow Education

- 07/2020 - 06/2022 Monthly lecture to the interns rotating through pain clinic
- 08/03/2020 - Present "Membrane Stabilizers" MCW Pain medicine Boot Camp. Pain medicine fellows lecture, Medical College of Wisconsin
- 08/20/2020 "Ultrasound guidance for pain interventions" Pain medicine fellows workshop Basics
- 09/03/2020 "Ultrasound guidance for pain interventions" Pain medicine fellows workshop: Joints
- 10/01/2020 - 2020 "Epidural Abscess; managing complications"
- 07/2021 "Epidural Abscess; managing complications"
- 08/04/2021 Membrane stabilizers

EXTRAMURAL TEACHING:

Postdoctoral Fellow Education

- 07/13/2021 - 2021 Clement Zablocki VA Medical Center, "Spine sonoanatomy"

EXTRAMURAL STUDENTS, FACULTY, RESIDENTS, AND CLINICAL/RESEARCH FELLOWS MENTORED:

Residents

- 04/2021 - Present Christopher Thuc Ha, Career advancement, Mayo Clinic
- 04/2021 - Present Benjamin Gill, Faculty mentor, University of Missouri

Faculty

- 01/2012 - Present Vaishnavi Musqueet, Faculty mentor, Department of Physical Medicine & Rehabilitation, Medical College of Wisconsin
- 10/2017 - Present Vasudha Goel, Academic mentorship, University of Minnesota, Publications

PROGRAMMATIC DEVELOPMENTS:

Educational Programs

Fellow

- 2013 - Present Obtained a 5 year ACGME accreditation with commendation and no citations for the Pain Medicine Fellowship program 2013

BIBLIOGRAPHY

Refereed Journal Publications/Original Papers

1. Arain SR, Barth CD, Shankar H, Ebert TJ. "Choice of volatile anesthetic for the morbidly obese patient: sevoflurane or desflurane". J Clin Anesth 2005, 17:413-419.
2. Arain SR, Shankar H, Ebert TJ. "Desflurane enhances reactivity during the use of the laryngeal mask airway", Anesthesiology 2005, 103: 495-499.
3. Ebert, TJ, Ficke DJ, Arain SR, Holtz MN, Shankar H. "Vasodilation from sufentanil in humans". Anesth Analg 2005, 101:1677-80.
4. Shankar H, "Ultrasound guided steroid injection for obturator neuralgia", Pain Practice 2008, 8:320-323.
5. Shankar H, "Ultrasound demonstration of vascularity changes with changes in pain perception in a stump neuroma" Clinical Journal of Pain 2009, 25:253-255.
6. Shankar H, Scarlett JA, Abram SE. Anatomy and pathophysiology of intervertebral disc disease Techniques in Regional Anesthesia and Pain Management. April 2009;13(2):67-75.
7. Shankar H, "Ultrasound guided localization of difficult-to-access refill port of the intra-thecal pump reservoir", Neuromodulation 2009, 12:215-218.

8. Shankar H, Zainer CM. Ultrasound guidance for epidural steroid injections Techniques in Regional Anesthesia and Pain Management. October 2009;13(4):229-235.
9. Shankar H, Khatri V, Eastwood D. "Retrospective comparison of ultrasound and fluoroscopic image guidance for intercostal steroid injections". Pain Practice. 2010;10 (4): 312–317
10. Khatri V, Shankar H, Bravo-Fernandez C. "Transhiatal herniation of intestine with circulatory collapse on anesthesia induction" Journal of Clinical Anesthesia. 2011;23(7): 572-4
11. Shankar H, Shah J, Eastwood D. "Retrospective analysis of techniques for suprascapular nerve steroid injections in chronic shoulder pain" Journal of Neurology Research. 2011;1(2):43-47
12. Shankar H, Pagel PS. "Potential Adverse Ultrasound - related Biological Effects: A Critical Review" Anesthesiology. 2011: 115(5):1109-1204
13. Shankar H, Reddy S. "Two and Three dimensional ultrasound imaging to facilitate detection and targeting of taut bands in myofascial pain syndrome" Pain Medicine, 2012; 13 (7) 971-975
14. Rajput K, Reddy S, Shankar H. "Painful neuromas: a topical review". Clinical Journal of Pain. 2012; 28(7):639-645
15. Shankar H, Rajput K, Murugiah K. "Correlation between spinous process dimensions and ease of spinal anaesthesia", Indian journal of Anaesthesia, 2012;56:250-4.
16. Shankar H, Simhan S. "Transient neuronal injury followed by intravascular injection during an ultrasound guided stellate ganglion block" Anesthesiology and Pain Medicine 2012, Volume 2, Issue 3, Winter: 133-7.
17. Quintana JS, Shankar H. Would we be able to validate diagnostic criteria and pave the way for discerning causality in trigeminal neuralgia? Anesth Pain Med. 2012;1(3):216-7. PMID: PMC4018692
18. Shankar H, Cummings C. "Ultrasound imaging of embedded shrapnel facilitates diagnosis and management of myofascial pain syndrome" Pain Practice 2013 Jun;13(5):405-8
19. Thomas K, Shankar H. "Targeting Myofascial Taut Bands by Ultrasound", Current Pain and Headache Reports 2013 Jul;17(7):349
20. Shankar H, Hamda H, Russell, Peterson S. "Epidural abscesses following chronic pain injections" Indian Journal of Pain 2015 Jan – April; 29 (1): 46-51
21. Shankar H, Hansen J, Thomas K. Phantom pain in a patient with brachial plexus avulsion injury. Pain Med. 2015 Apr;16(4):777-81.
22. Maher T, Shankar H. Ultrasound-Guided Peristyloid Steroid Injection for Eagle Syndrome. Pain Pract. 2017 Apr;17(4):554-557.
23. Baig S, Moon JY, Shankar H. Review of Sympathetic Blocks: Anatomy, Sonoanatomy, Evidence, and Techniques. Reg Anesth Pain Med. 2017;42(3):377-391.
24. Ryu JH, Lee CS, Kim YC, Lee SC, Shankar H, Moon JY. Ultrasound-Assisted Versus Fluoroscopic-Guided Lumbar Sympathetic Ganglion Block: A Prospective and Randomized Study. Anesth Analg. 2018 Apr;126(4):1362-1368.
25. Goel V, Patwardhan AM, Ibrahim M, Schulz DM, Shankar H "Indented intrathecal drug delivery system with loss of reservoir volume" Regional Anesthesia & Pain Medicine 2019;44:747-749
26. Goel V, Patwardhan AM, Ibrahim M, Howe CL, Schulz DM, Shankar H "Complications Associated with Stellate Ganglion Nerve Block: a systematic Review" Regional Anesthesia and Pain Medicine 2019; 44:669-678
27. Goel V, Shankar H, Mulpuru SK, Ramakrishna H. Inappropriate Defibrillator Shocks During Cervical Medial Branch Radiofrequency Ablation: A Case Report. A A Pract. 2020 Sep;14(11):e01286.
28. Goel V, Kumar V, Agrawal SN, Patwardhan AM, Ibrahim M, DeSimone DC, Sivanesan E, Banik RK, Shankar H. Outcomes Associated With Infection of Chronic Pain Spinal Implantable Electronic Devices: Insights From a Nationwide Inpatient Sample Study. Neuromodulation. 2021 Jan;24(1):126-134. PMID: PMC9076045
29. Goel V, Yang Y, Kanwar S, Banik RK, Patwardhan AM, Ibrahim M, Sivanesan E, Shankar H. Adverse Events and Complications Associated With Intrathecal Drug Delivery Systems: Insights From the Manufacturer and User Facility Device Experience (MAUDE) Database. Neuromodulation. 2021 Oct;24(7):1181-1189. PMID: PMC9034464
30. Goel V, Moran B, Kaizer AM, Sivanesan E, Patwardhan AM, Ibrahim M, DeWeerth JC, Shannon C 4th, Shankar H. Opioid Prescriptions by Pain Medicine Physicians in the Medicare Part D Program: A Cross-Sectional Study. Anesth Analg. 2021 Jun 01;132(6):1748-1755. PMID: PMC9032896
31. Goel V, Patwardhan AM, Ibrahim M, Yang Y, Sivanesan E, Banik RK, Shannon C, Shankar H. Industry Payments to Pain Medicine Physicians: An Analysis of the Centers for Medicare and Medicaid Services Open Payments Program. Pain Med. 2021 Jun 04;22(6):1376-1386.

32. Haskins SC, Bronshteyn Y, Perlas A, El-Boghdadly K, Zimmerman J, Silva M, Boretsky K, Chan V, Kruisselbrink R, Byrne M, Hernandez N, Boublik J, Manson WC, Hogg R, Wilkinson JN, Kalagara H, Nejim J, Ramsingh D, Shankar H, Nader A, Souza D, Narouze S. American Society of Regional Anesthesia and Pain Medicine expert panel recommendations on point-of-care ultrasound education and training for regional anesthesiologists and pain physicians-part II: recommendations. *Reg Anesth Pain Med.* 2021 Dec;46(12):1048-1060.
33. Haskins SC, Bronshteyn Y, Perlas A, El-Boghdadly K, Zimmerman J, Silva M, Boretsky K, Chan V, Kruisselbrink R, Byrne M, Hernandez N, Boublik J, Manson WC, Hogg R, Wilkinson JN, Kalagara H, Nejim J, Ramsingh D, Shankar H, Nader A, Souza D, Narouze S. American Society of Regional Anesthesia and Pain Medicine expert panel recommendations on point-of-care ultrasound education and training for regional anesthesiologists and pain physicians-part I: clinical indications. *Reg Anesth Pain Med.* 2021 Dec;46(12):1031-1047.
34. Goel V, Shankar H. Response to Letter to the Editor Regarding: "Adverse Events and Complications Associated With Intrathecal Drug Delivery Systems: Insights From the Manufacturer and User Facility Device Experience (MAUDE) Database" *Neuromodulation.* June 2021;24(4):798.
35. Goel V, Kumar V, Patwardhan AM, Ibrahim M, Sivanesan E, Darrow D, Shankar H. Procedure-Related Outcomes Including Readmission Following Spinal Cord Stimulator Implant Procedures: A Retrospective Cohort Study. *Anesth Analg.* 2022 Apr 01;134(4):843-852.
36. Goel V, Shankar H. Response to Letter to the Editor Regarding: "Adverse Events and Complications Associated With Intrathecal Drug Delivery Systems: Insights From the Manufacturer and User Facility Device Experience (MAUDE) Database". *Neuromodulation.* 2021 Jun;24(4):798.
37. Goel V, Kaizer A, Patwardhan AM, Ibrahim M, DeSimone DC, Sivanesan E, Shankar H. Postoperative Oral Antibiotic Use and Infection-Related Complications After Spinal Cord Stimulator Surgery. *Neuromodulation.* 2021 Dec 18:
38. Goel V, Kaizer A, Patwardhan AM, Ibrahim M, DeSimone DC, Sivanesan E, Shankar H. Postoperative Oral Antibiotic Use and Infection-Related Complications After Spinal Cord Stimulator Surgery. *Neuromodulation.* 2022 Jul;25(5):738-744.
39. Shankar H. Drugs in Chronic Pain Management *Pain Medicine: The Requisites in Anesthesiology.* 7 April 2006:54-67.
40. Speltz Paiz R, Kaizer A, Jain SV, Darrow DP, Shankar H, Goel V. Lead and Pulse Generator Migration After Spinal Cord Stimulation Implantation: Insights From an Analysis of 7322 Patients. *Neuromodulation.* 2023 Jul;26(5):1095-1101.
41. Goel V, Kaizer AM, Jain S, Darrow D, Shankar H. Intraoperative neurophysiological monitoring and spinal cord stimulator implantation. *Reg Anesth Pain Med.* 2024 Mar 04;49(3):192-199.
42. Shankar H, Sureshkumar S, Gurushankari B, Samanna Sreenath G, Kate V. Factors predicting prolonged hospitalization after abdominal wall hernia repair - a prospective observational study. *Turk J Surg.* 2021 Jun;37(2):96-102. PMID: PMC10233946
43. McGrath M, Shankar H. Neck Pain Secondary to Post Radiation Fibrosis Managed With Ultrasound-Guided Adhesiolysis. *WMJ.* 2023 Sep;122(4):298-301.
44. Shankar H, Saeed K. Ultrasound-Guided Intra-articular Hip Injections *Atlas of Ultrasound-Guided Procedures in Interventional Pain Management: Second Edition.* 1 January 2018:279-282.
45. Benzon HT, Elmofly D, Shankar H, Rana M, Chadwick AL, Shah S, Souza D, Nagpal AS, Abdi S, Rafla C, Abd-Elsayed A, Doshi TL, Eckmann MS, Hoang TD, Hunt C, Pino CA, Rivera J, Schneider BJ, Stout A, Stengel A, Mina M, FitzGerald JD, Hirsch JA, Wasan AD, Manchikanti L, Provenzano DA, Narouze S, Cohen SP, Maus TP, Nelson AM, Shanthanna H. Use of corticosteroids for adult chronic pain interventions: sympathetic and peripheral nerve blocks, trigger point injections - guidelines from the American Society of Regional Anesthesia and Pain Medicine, the American Academy of Pain Medicine, the American Society of Interventional Pain Physicians, the International Pain and Spine Intervention Society, and the North American Spine Society. *Reg Anesth Pain Med.* 2024 Aug 07.

Books, Chapters, and Reviews

1. Shankar H. "Pharmacology of analgesic medications", *Pain Medicine: The Requisites*, Ed. Stephen E Abram, Mosby, 2006: 54-67.
2. Ebert TJ, Shankar H, Haake RM. "Perioperative considerations for patients with morbid obesity", *Anesthesiology Clinics of North America* 2006, 24: 621- 636.
3. Curran J, Sephadari A, Shankar H, " Radiological Imaging in the Management of Pediatric Pain" *Handbook of Pediatric Chronic Pain* , Eds. Brenda C McClain, Santhanam Suresh, Springer 2011: 235-252.

4. Shankar H, Simhan S. Ultrasound-guided hip injections Atlas of Ultrasound-Guided Procedures in Interventional Pain Management. 2011:325-330.
5. Gofeld M, Shankar H, "Ultrasound Guided Sympathetic Blocks: Stellate and Celiac plexus blocks" Essentials of Pain Medicine, Eds Benzon H, Raja SN, Liu SS, Fishman SM, Cohen SP, Hurley RW, Narouze S, Malik KM, Candido KD. 2011: 67,498-501
6. Gofeld M, Shankar H. "Peripheral & visceral sympathetic blocks" Raj's Practical Management of Pain. 5th Edition Ed Honorio Benzon. 2014:56, 755--768
7. Peng P, Shankar H. "Ultrasound-Guided Interventional Procedures in Pain Medicine: A Review of Anatomy, Sonoanatomy, and Procedures. Part V: Knee Joint" Regional Anesthesia and Pain Medicine 2014 Sep-Oct;39(5):368-80
8. Shankar H, Rajput K. " Ultrasound Guidance for Interventional Pain Management", Atlas of Pain Management Procedures, Eds. Diwan S, Stats P. McGraw Hill, 2015:3
9. Jankovic D Shankar H, "Celiac Plexus Block", Textbook of Interventional Pain Medicine, Ed. Jankovic D, Peng P 2015: 52, 673 - 684
10. Peng P, Shankar H, Hurdle MF "Knee" Anatomy and Sonoanatomy for Ultrasound Guided Pain Interventions, 1st Edition Ed. Philip Peng 2015
11. Shankar H, Johar K. "Ultrasound guided piriformis, psoas and quadratus lumborum muscle injections" Multimodal imaging in interventional pain management. Ed. Narouze S Oxford University press 2016:47, 582- 593
12. Shankar H, Khalid A. "Ultrasound guided knee joint injections" Multimodal imaging in interventional pain management. Ed. Narouze S Oxford University press 2016:41, 489- 498
13. Shankar H, Vardanyan M. "Ultrasound guided hip joint injections" Multimodal imaging in interventional pain management. Ed. Narouze S Oxford University press 2016:40, 481-488
14. Shankar H. "Ultrasound Related Biological Effects: Are There any Potential Adverse and Safety Issues?" Musculoskeletal Ultrasound for Regional Anesthesia and Pain Medicine Ed. Karmakar MK 2016
15. Shankar H. "Ultrasound Imaging of the Neck (Cervical Spine and Paravertebral region) and Injection Techniques". Musculoskeletal Ultrasound for Regional Anesthesia and Pain Medicine Ed. Karmakar MK 2016
16. Shankar H. "Ultrasound Imaging of the Hip and Injection Techniques." Musculoskeletal Ultrasound for Regional Anesthesia and Pain Medicine Ed. Karmakar MK 2016
17. Shankar H, Saeed K "Ultrasound Guided Intra-articular hip injections", Atlas of Ultrasound Guided Procedures in Interventional Pain Management, Ed. Samer Narouze, Springer, 2018 28 279-282.
18. Shankar H. "Novel Applications of Ultrasound" Musculoskeletal Ultrasound for Regional Anesthesia and Pain Medicine Ed. Karmakar MK 2016
19. Gofeld M, Shankar H. "Ultrasound Guided Sympathetic Blocks: Stellate and Celiac plexus blocks" Essentials of Pain Medicine, Eds Benzon H, Raja SN, Liu SS, Fishman SM, Cohen SP, Hurley RW, Narouze S, Malik KM, Candido KD. 2016
20. Shankar H, "Sonoanatomy Relevant for Ultrasound Guided Injections of the Cervical Spine" Atlas of Sonoanatomy for Regional Anesthesia and Pain Medicine Ed. Karmakar MK 2018
21. H Shankar, "Intercostal block", Interventional Pain Ed. Stogicza AR, Mansano AM, Trescot AM, Staats PS Springer 2020: 9 67 - 70

Editorials, Letters To Editor, Other

1. Shankar H. "Spinal anesthesia in Paget's disease of bone", letter. Anaesthesia, July 2000, 55: 698.
2. Shankar H, "High airway pressure mandates diagnosis and remedy", letter. Anesthesia Patient Safety Foundation Newsletter, Spring, 2005.
3. Shankar H, "Safety of cervical transforaminal steroid injections", letter. Archives of Physical Medicine and Rehabilitation 2007, 88:1742.
4. Shankar H, "Ultrasound guided sciatic neuroma block for treatment of intractable pain", letter. Journal of Clinical Anesthesia 2008, 20:483-484.
5. Shankar H, "Ultrasound guided peripheral nerve blocks and intravascular injection" letter. Anesthesiology 2008, 109:1142-1143.
6. Shankar H. Ultrasound guidance: Concerns and safety issues may have some answers. Anesthesiology. 2010 Jun;112(6):1537,8; author reply 1539-40.
7. Usoltsev N, Shankar H, Zainer C. "A case for routine tonometry to avoid post operative visual loss" letter. British Journal of Anaesthesia. 2011;(4): 648-9
8. Shankar H. "Ultrasound guided hip joint injections: A new scanning routine for easy methodical training".

Pain Practice 2012 Jan;12(1):80-1

9. Quintana J, Shankar H. "Would we be able to validate diagnostic criteria and pave the way for discerning causality in trigeminal neuralgia?" *Anesthesiology and Pain Medicine* 2012 Jan; 1(3); 216-217
10. Rajput K, Shankar H. "Recurrent Neuromas: a Therapeutic Challenge?" *Clinical Journal of Pain* 2013 29 (5) 469
11. Filip P, Shankar H, Biegelsen P. "Cervical Paravertebral Block for Forearm and Hand Anesthesia: the jury is still out." *Regional Anesthesia and Pain Medicine* 2014 39(1), 84-5
12. Gorski R, Shankar H. "In Ultrasound Images, All That Is Black Is Not Always Fluid" *Anesthesiology* 2018 May 128 (5), 1047-1048
13. Khan Z, Shankar H. Lumbar 5 Nerve Root Injury Following Dorsal Root Ganglion Stimulator Lead Placement. *Neuromodulation*. 2020 Feb;23(2):258-259.

Non-Refereed Journal Publications/Original Papers

1. Shankar H. "Thermal and Mechanical Indices and Their Relevance to Ultrasound Guidance in Anesthesiology", ASRA News letter 2012

Abstracts

1. Shankar H, Arain SR, Ebert TJ, "Is desflurane ideal for day care surgery with LMA?" Poster presentation at Midwest Anesthesiology Residents Conference, Minnesota, March 2004.
2. Shankar H, Arain SR, Ebert TJ, "Opioids as vasodilators? Direct evidence in humans". Poster presentation at the Society of Cardiovascular Anesthesiologists, 26th Annual Meeting & Workshops, Hawaii, April 2004.
3. Shankar H, Arain SR, Ebert TJ, "Reactivity to LMA with desflurane and sevoflurane". Poster presentation at the American Society of Anesthesiologists, Annual meeting, Las Vegas, October 2004.
4. Shankar H, Phillip P, Dammanna R, "Can we replace fluoro in the pain clinic with US " Poster presentation at ASA annual meeting, Chicago, October 2006.
5. Shankar H, Brethauer J. "Ultrasound guided steroid injection for auriculotemporal neuralgia" Poster presentation at the American Society of Anesthesiologists annual meeting, San Francisco, October 2007.
6. Allen BJ, Hall D, Shankar H. "Glossopharyngeal nerve block under ultrasound assistance" Poster presentation at the American Society of Anesthesiologists annual meeting, San Francisco, October 2007.
7. Shankar H, Biggerstaff M, Allen B. "No procedure left behind- Promoting safety in the pain clinic with ultrasound guidance" Scientific Exhibit at the American Society of Anesthesiologists annual meeting, San Francisco, October 2007.
8. Shankar H, Hansen T. "Ultrasound guidance for obturator neuropathy" Poster presentation at the meeting of American Society of Regional Anesthesia and Pain Medicine, Boca Raton, November 2007.
9. Shankar H, Virdi A. "Ultrasound guidance for meralgia paresthetica" Poster presentation at the meeting of American Society of Regional Anesthesia and Pain Medicine, Boca Raton, November 2007.
10. Lindenbaum L, Shankar H. "Ultrasound demonstration of increased vascularity in stump neuroma" Poster presentation at the meeting of American Society of Regional Anesthesia and Pain Medicine, Boca Raton, November 2007.
11. Ruttum D, Shankar H. " Novel application of ultrasound in the pain clinic" Poster presentation at the meeting of American Society of Regional Anesthesia and Pain Medicine, Cancun, Mexico, May 2008.
12. Shah J, Shankar H. "Retrospective analysis of techniques for suprascapular nerve steroid injections in chronic shoulder pain" Poster presentation at the meeting of American Society of Regional Anesthesia and Pain Medicine, Huntington Beach, California, November 2008.
13. Khatri V, Shankar H, Bravo-Fernandez C. "Undetected trans-hiatal mediastinal herniation of strangulated bowel causing collapse on anesthesia induction" Poster presentation at the Annual meeting of American Society of Anesthesiologists, New Orleans, October 2009.
14. Shankar H, Khatri V, Eastwood D. "Retrospective comparison of ultrasound and fluoroscopic image guidance for intercostal steroid injections". Poster presentation at the American Society of Regional Anesthesia and Pain Medicine, San Antonio, Texas, November 2009 and at the NYSSA PGA 63 Annual meeting, New York, December 2009.
15. Shankar H. "Description of new scanning technique of hip joint interventions for reliable location and teaching " *International Society for Ultrasound in Anesthesia*, Toronto, Canada, June 2010
16. Kanishka R, Murugiah K, Shankar H. "Interspinous Gap: a Better Predictor of Ease of Neuraxial Blockade" Poster presentation at the American Society of Regional Anesthesia and Pain Medicine, Phoenix,

Arizona, November 2010

17. Kanishka R, Shankar H. "Psoas muscle trigger point, masquerading as lumbar radiculopathy, treated with ultrasound guided trigger point injection". Poster presentation at the American Society of Regional Anesthesia and Pain Medicine, New Orleans, Louisiana, November 2011
18. Christopher Yopp, Shankar H "Electrocautery Grounding Pad Induced Burn Pain Treated with Paravertebral Steroids" Poster presentation at the World Congress of Regional Anesthesia and Pain medicine, New York, NY 2018
19. Cummings C, Anderson C, Shankar H. " The Great Balancing Act: Optimizing Regional Anesthesia for Breast Surgery" Poster presentation at the American Society of Regional Anesthesia and Pain Medicine, Las Vegas NV 2019
20. Davidovich R, Cummings C, Shankar H "Comparing Chlorhexidine Gluconate as an Alternative for Traditional Ultrasound Gel" Poster presentation at the American Society of Regional Anesthesia and Pain Medicine, Las Vegas NV 2019
21. Goel V, Kaiser A, Patwarthan AM, Ibrahim M, Desimone D, Sivanesan E, Shankar H. "Antibiotic prophylaxis for spinal cord stimulator implantation surgery is lower than optimal expert consensus statement recommendation" ASRA spring meeting 2021

Non-Peer Reviewed Educational Products

1. Shankar H, Chan V, Intercostal block Tutorial, Philips Educational Series on ultrasound Guided RA &PM, 2014