

Curriculum Vitae
Sandesh S. Rao M.D.

Contact Information

Business Address:
Washington Orthopaedics and Sports Medicine
5215 Loughboro Rd NW
Washington, DC 20016

Email:
Srao875@gmail.com

Education

07/2005 – 06/2009 University of Maryland, Baltimore County
B.S., Biological Sciences, Cum laude
Meyerhoff Scholarship Program

08/2009 – 06/2013 Johns Hopkins University School of Medicine
M.D.

Post Graduate Education and Training

07/2013 – 06/2016 Johns Hopkins Hospital – Department of Medicine
Osler Medical Housestaff Training Program - Categorical Resident

07/2016 – 06/2021 Johns Hopkins Hospital – Department of Orthopaedic Surgery
Orthopaedic Surgery Residency Training

07/2021 – 07/2022 Rush University – Department of Orthopaedic Surgery
Adult Reconstruction Fellow

Professional Society Memberships

01/2017 – present American Academy of Orthopaedic Surgeons

01/2017 – present Maryland Orthopaedic Association

01/2018 – present American Association of Hip and Knee Surgeons

Honors and Awards

05/2010 Johns Hopkins Deans' Office Summer Research Fellowship

06/2017 Rotating Intern of the year – Johns Hopkins General Surgery Training Program

10/2018 Invitation – American Association of Hip and Knee Surgeons Resident Course

Professional Certification

09/2016 American Board of Internal Medicine – Board certified

09/2021 American Board of Orthopaedic Surgeons Part 1 – Passed

06/2021 ACLS/BLS Certified

Publications

Peer-reviewed journal articles

1. Kino T, Ichijo T, Amin ND, Kesavapany S, Wang Y, Kim N, **Rao S**, Player A, Zheng YL, Garabedian MJ, Kawasaki E, Pant HC, Chrousos GP. Cyclin-Dependent Kinase 5 differently regulates the transcriptional activity of the glucocorticoid receptor through phosphorylation: clinical information for the nervous system response to glucocorticoids and stress. *Mol Endocrinol*. 2007 Jul;21(7):1552-68
2. Inokuchi T, Ikegami N, Gupta N, **Rao S**, Anderson GF. Comparison of price, volume, and composition of services provided to inpatients for two procedures between a US and a Japanese academic hospital. *Health*. 2013 5:703-711
3. Rinke ML, Bundy DG, Velasquez CA, **Rao S**, Zerhouni Y, Lobner K, Blanck JF, Miller MR. Interventions to reduce pediatrics medication errors: a systematic review. *Pediatrics*. 2014 Aug;134(2):338-60
4. Jain A, Brooks JT, **Rao SS**, Ain MC, Sponseller PD. Cervical fractures with associated spinal cord injury in children and adolescents: epidemiology, costs, and in-hospital mortality rates in 4418 patients. *J Child Orthop*. 2015 Jun;9(3):171-5
5. **Rao SS**, Venuti KD, Dietz HC 3rd, Sponseller PD. Quantifying Health Status and Function in Marfan Syndrome. *J Surg Orthop Adv*. 2016 Spring;25(1):34-40
6. Moran RA, Jalaly NY, Kamal A, **Rao S**, Klapheke R, James TW, Kambhampati S, Makary MA, Hirose K, Kumbhari V, Stein EM, Khashab MA, Lennon AM, Kalloo AN, Zaheer A, Hernaez R, Singh VK. Ileus is a predictor of local infection in patients with acute necrotizing pancreatitis. *Pancreatology*. 2016 Nov - Dec;16(6):966-972
7. **Rao SS**, Jain A, Zhou D, Njoku DB, Sponseller PD. Routine Preoperative Echocardiograms in Select Patients with Adolescent Idiopathic Scoliosis Rarely Show Abnormalities and do not Predict Adverse Cardiovascular Events. *MOJ Orthop Rheumatol* 2017 7(1): 00259

8. Puvanesarajah V, **Rao S**, Hassanzadeh H, Kebaish K. Determinants of perioperative transfusion risk in patients with adult spinal deformity. *J Neurosurg Spine*. 2018 Apr;28(4):429-435
9. Kotian RN, Puvanesarajah V, **Rao S**, El Abiad JM, Morris CD, Levin AS. Predictors of survival after intramedullary fixation of completed or impending pathologic femur fractures from metastatic disease. *Surg Oncol*. 2018 Sep;27(3):462-467
10. Rao AD, Chen Q, Million L, Spunt SL, Fitzgerald TJ, Hu C, **Rao SS**, Laurie F, Kessel S, Morano K, Ladra MM, Terezakis SA. Preoperative Intensity Modulated Radiation Therapy Compared to Three-Dimensional Conformal Radiation Therapy for High-Grade Extremity Sarcomas in Children: Analysis of the Children's Oncology Group Study ARST0332. *Int J Radiat Oncol Biol Phys*. 2019 Jan 1;103(1):38-44
11. Rao AD, Ladra M, Dunn E, Kumar R, **Rao SS**, Sehgal S, Dorafshar AH, Morris CD, Terezakis SA. A Road Map for Important Centers of Growth in the Pediatric Skeleton to Consider During Radiation Therapy and Associated Clinical Correlates of Radiation-Induced Growth Toxicity. *Int J Radiat Oncol Biol Phys*. 2019 Mar 1;103(3):669-679
12. **Rao SS**, El Abiad JM, Puvanesarajah V, Levin AS, Jones LC, Morris CD. Osteonecrosis in pediatric cancer survivors: Epidemiology, risk factors, and treatment. *Surg Oncol*. 2019 Mar;28:214-221
13. Labaran LA, Puvanesarajah V, **Rao SS**, Chen D, Shen FH, Jain A, Hassanzadeh H. Recent Preoperative Lumbar Epidural Steroid Injection Is an Independent Risk Factor for Incidental Durotomy During Lumbar Discectomy. *Global Spine J*. 2019 Dec;9(8):807-812.
14. Puvanesarajah V, Fayad LM, **Rao SS**, McCarthy EF, Morris CD. Extremity gossypiboma mimicking sarcoma: case report and review. *Skeletal Radiol*. 2019 Apr;48(4):629-635
15. **Rao SS**, Mawn JG, Lobaton GO, Puvanesarajah V, Amin RM, Humbyrd CJ, Sterling RS. Opioid-related compartment syndrome and associated morbidity. *Injury*. 2019 Aug;50(8):1429-1432
16. El Abiad JM, Raad M, Puvanesarajah V, **Rao SS**, Morris CD, Levin AS. Prophylactic Versus Postfracture Stabilization for Metastatic Lesions of the Long Bones: A Comparison of 30-day Postoperative Outcomes. *J Am Acad Orthop Surg*. 2019 Aug 1;27(15):e709-e716
17. Labaran LA, Amin R, Bolarinwa S, Puvanesarajah V, **Rao SS**, Browne JA, Werner BC. Labaran LA, Amin R, Bolarinwa SA, Puvanesarajah V, Rao SS, Browne JA, Werner BC. Revision Joint Arthroplasty and Renal Transplant: A Matched Control Cohort Study. *J Arthroplasty*. 2020 Jan;35(1):224-228.
18. Labaran LA, Amin R, Sequeira S, Puvanesarajah V, Haug E, **Rao SS**, Browne JA, Werner BC. Does Polycythemia Vera Increase Risk of Postoperative Complications Following Primary Total Joint

Arthroplasty? A Retrospective Matched Control Cohort Study of 6932 Polycythemia Vera Patients. *J Arthroplasty*. 2020 Jun;35(6S):S133-S137.

19. **Rao SS**, El Abiad JM, Puvanesarajah V, Raad M, Morris CD, Forsberg JA, Levin AS. Healing of Pathologic Humeral Fractures in Patients with Metastatic Disease: Consideration for Operative Fixation in Patients. *J Surg Orthop Adv*. 2020 Summer;29(3):177-181.
20. Loeb AE, **Rao SS**, Ficke JR, Morris CD, Riley LH, III, Levin AS. Departmental experience and lessons learned with accelerated introduction of telemedicine during the COVID-19 crisis. *J Am Acad Orthop Surg*. 2020;28(11):e469-476.
21. **Rao SS**, Loeb AE, Amin RM, Golladay GJ, Levin AS, Thakkar SC. Establishing Telemedicine in an Academic Total Joint Arthroplasty Practice: Needs and Opportunities Highlighted by the COVID-19 Pandemic. *Arthroplast Today*. 2020 Sep;6(3):617-622.
22. Kebaish KJ, Puvanesarajah V, **Rao S**, Zhang B, Ottesen TD, Grauer JN, Khanuja H. Diabetes Status Affects Odds of Body Mass Index-dependent Adverse Outcomes After Total Hip Arthroplasty. *J Am Acad Orthop Surg*. 2021 Jan 15;29(2):71-77.
23. Bell JE, Amin R, Labaran LA, Sequeira SB, **Rao SS**, Werner BC. Impact of Compensated Cirrhosis Etiology on Postoperative Outcomes Following Total Knee Arthroplasty. *J Arthroplasty*. 2021 Jan;36(1):148-153.e1.
24. **Rao SS**, Chaudhry YP, Hasan SA, Puvanesarajah V, Amin RM, Oni JK, Sterling RS, Khanuja HS. Factors associated with perioperative transfusion in lower extremity revision arthroplasty under a restrictive blood management protocol. *J Am Acad Orthop Surg*. 2021;29(8):e404-409
25. **Rao SS**, Chaudhry YP, Solano MA, Sterling RS, Oni JK, Khanuja HS. Routine Preoperative Nutritional Screening in All Primary Total Joint Arthroplasty Patients Has Little Utility. *J Arthroplasty*. 2020 Dec;35(12):3505-3511.
26. Wustrack R, **Rao SS**, Morris CD. Musculoskeletal effects of cancer and cancer treatment. *J Am Acad Orthop Surg*. 2020;28(16):e716-728.
27. Chaudhry YP, **Rao SS**, Hasan SA, Oni JK, Khanuja HS, Sterling RS. Routine basic metabolic panels are not needed in all patients after primary total joint arthroplasty: an opportunity for cost reduction. *J Arthroplasty*. 2021;36(2):462-466.
28. Nayar SK, MacMahon A, Mikula JD, Greenberg M, Barry K, **Rao SS**. Free Falling: Declining Inflation-Adjusted Payment for Arthroplasty Surgeons. *J Arthroplasty*. 2021 Mar;36(3):795-800.

29. Mawn JG, **Rao SS**, Chaudhry YP, Gottlich C, Lobaton GO, Sabharwal S, Sterling RS, Humbyrd CJ. Septic Arthritis Among Users of Injection Drugs: Clinical Course and Microbial Characteristics. *Orthopedics*. 2021 Nov-Dec;44(6):e747-e752
30. Sequeira SB, Labaran LA, Bell JE, Amin RM, **Rao SS**, Werner BC. Compensated Cirrhosis Is Associated With Increased Risk of Complications Following Total Hip Arthroplasty in a Large Medicare Database. *J Arthroplasty*. 2021 Apr;36(4):1361-1366.e1.
31. Chaudhry YP, **Rao SS**, Puvanesarajah V, Amin RM, Khanuja HS, Oni JK, Hasenboehler EA, Sterling RS. Complications and 30-day mortality rate after hip fracture surgery in superobese patients. *J Orthop Trauma*. 2021;35(6):322-328.
32. Chaudhry YP, MacMahon A, **Rao SS**, Sterling RS, Oni JK, Khanuja HS. Incidence, mortality, and complications of acute myocardial infarction with and without percutaneous coronary intervention in hip fracture patients. *Injury*. 2021 Aug;52(8):2344-2349.
33. Raad M, Amin R, Puvanesarajah V, Musharbash F, **Rao S**, Best MJ, Amanatullah DF. The CARDE-B Scoring System Predicts 30-Day Mortality After Revision Total Joint Arthroplasty. *J Bone Joint Surg Am*. 2021 Mar 3;103(5):424-431.
34. Amin RM, Chaudhry YP, **Rao SS**, Puvanesarajah V, Best MJ, Etchill E, Hasenboehler EA. Extremity fasciotomy for patients on extracorporeal membrane oxygenation is independently associated with inpatient mortality. *Orthop Traumatol Surg Res*. 2021 Nov 14:103144.
35. Amin RM, Puvanesarajah V, Chaudhry YP, Best MJ, **Rao SS**, Frank SM, Hasenboehler EA. Reducing unnecessary crossmatching for hip fracture patients by accounting for preoperative hemoglobin concentration. *World J Orthop*. 2021 May 18;12(5):292-300.
36. MacMahon A, **Rao SS**, Chaudhry YP, Hasan SA, Epstein JA, Hegde V, Valaik DJ, Oni JK, Sterling RS, Khanuja HS. Preoperative Patient Optimization in Total Joint Arthroplasty-The Paradigm Shift from Preoperative Clearance: A Narrative Review. *HSS J*. 2022 Aug;18(3):418-427.
37. Chaudhry YP, MacMahon A, **Rao SS**, Mekkawy KL, Toci GR, Oni JK, Sterling RS, Khanuja HS. Predictors and Outcomes of Postoperative Hemoglobin of <8 g/dL in Total Joint Arthroplasty. *J Bone Joint Surg Am*. 2022 Jan 19;104(2):166-171.
38. Amin RM, Raad M, **Rao SS**, Musharbash F, Best MJ, Amanatullah DF. Survival bias may explain the appearance of the obesity paradox in hip fracture patients. *Osteoporos Int*. 2021 Dec;32(12):2555-2562

39. **Rao SS**, Suresh KV, Margalit A, Morris CD, Levin AS. Regional or Neuraxial Anesthesia May Help Mitigate the Effects of Bone Cement Implantation Syndrome in Patients Undergoing Cemented Hip and Knee Arthroplasty for Oncologic Indications. *J Am Acad Orthop Surg*. 2022 Feb 1;30(3):e375-e383.
40. LiBrizzi CL, **Rao SS**, Tuffaha SH, Levin AS, Gross JM, Morris CD. Iatrogenic metastasis of soft-tissue sarcoma at the donor flap site: case report and proposed surgical oncologic techniques. *J Am Acad Orthop Surg*. 2021;5(12):e21.00208.
41. Harris AB, Wang KY, Mo K, Gu A, **Rao SS**, Thakkar SC. Outpatient Simultaneous Bilateral Total Knee Arthroplasty: Is It Safe? *J Arthroplasty*. 2022 Apr;37(4):699-703.
42. LiBrizzi CL, **Rao SS**, Wang KY, Levin AS, Morris CD. Survey of sarcoma surgery principles among orthopaedic oncologists. *Surg Oncol*. 2022 Jun;42:101782.
43. Harris AB, Wang KY, Reddy R, Agarwal AR, **Rao S**, Golladay GJ, Thakkar SC. A Novel Method for Stratification of Major Complication Risk using Body Mass Index Thresholds for Patients Undergoing Total Hip Arthroplasty: A National Cohort of 224,413 Patients. *J Arthroplasty*. 2022 Apr 30:S0883-5403(22)00479-X.
44. Amin RM, Raad M, **Rao SS**, Guilbault R, Best MJ, Amanatullah DF. Preoperative Hypoalbuminemia Is Associated With Early Morbidity and Mortality After Revision Total Hip Arthroplasty. *Orthopedics*. 2022 May 17:1-6.

Abstracts

1. **Rao S**, Puvanesarajah V, Hassanzadeh H, Kebaish K. Quality of Intraoperative Transfusions: Blood Salvage versus Allogeneic Transfusions. Podium presentation. 32nd North American Spine Society Annual Meeting. October 27, 2017. Orlando, FL.
2. Puvanesarajah V, **Rao S**, Hassanzadeh H, Kebaish K. Determinants of Intraoperative Transfusions in Adult Spinal Deformity Patients. E-poster. 32nd North American Spine Society Annual Meeting. October 27, 2017. Orlando, FL.
3. **Rao SS**, El Abiad JM, Puvanesarajah V, Raad M, Morris C, Forsberg J, Levin AS. Pathologic Humerus Fractures in Patients with Metastatic Diseases: An Argument for Operative Fixation in All. Podium. OREF/ORS Northeast Region Resident Research Symposium. September 24th, 2018. Baltimore, MD.
4. **Rao SS**, El Abiad JM, Puvanesarajah V, Raad M, Morris C, Forsberg J, Levin AS. Pathologic Humerus Fractures in Patients with Metastatic Diseases: An Argument for Operative Fixation in All. Poster. Musculoskeletal Tumor Society Annual Meeting. October 2nd, 2018. New York, NY.

5. El Abiad JM, Raad M, Puvanesarajah V, **Rao SS**, Morris C, Levin AS. Prophylactic versus Post-Fracture Stabilization for Neoplastic Lesions of the Long Bones: A comparison of 30-Day Postoperative Outcomes. Podium. Musculoskeletal Tumor Society Annual Meeting. October 2nd, 2018. New York, NY.
6. Amin RM, Best, MJ, **Rao SS**, Sterling RS, Frank SM, Khanuja HS. A Transfusion Threshold of 7 g/dl in Patients with Femoral Neck Fractures Treated with Arthroplasty is Associated with Decreased Cardiac Morbidity, and Blood Product Utilization. American Association of Hip and Knee Surgeons Annual Meeting. November 1st, 2018. Dallas, TX.
7. Kotian R, Puvanesarajah V, **Rao S**, El Abiad J.M, Morris C.D., Levin A.S. Predictors of survival after intramedullary nail fixation of completed or impending pathologic femur fractures from metastatic disease. Poster. American Academy of Orthopaedic Surgeons Annual Meeting. March 12th, 2019. Las Vegas, NV.
8. Labaran LA, McNeely EL, Puvanesarajah V, Raad M, **Rao SS**, Jain A, Hassanzadeh H. Postoperative Outcomes and In-hospital Cost Following Cerebrovascular Accident in Patients Undergoing Anterior Cervical Discectomy and Fusion. Podium. National Medical Association Conference. July 27th, 2019. Honolulu, HA.
9. Morris C, **Rao S**, Zbijewski C. Quantitative imaging of radiation-induced bone loss in extremity sarcoma patients. American Academy of Orthopaedic Surgeons Annual Meeting. March 27th, 2020. Orlando, FL.
10. Raad M, Amin R, Musharbash F, **Rao S**, Best M, Amanatullah D. The CARDE-B Score for Predicting 30-Day Mortality after Revision Joint Arthroplasty. E – poster. American Association of Hip and Knee Surgeons Annual Meeting. November 5th, 2020. Dallas, TX.
11. **Rao S**, Margalit A, Levin A, Morris C. Mitigating Bone Cement Implantation Syndrome in Oncologic Patients Undergoing Cemented Hip and Knee Arthroplasty through Neuraxial or Regional Anesthesia. Musculoskeletal tumor society annual meeting. E – poster. October 9th, 2020. Virtual meeting.
12. Mekkawy KL, Chaudhry YP, MacMahon A, **Rao SS**, Toci GR, Oni JK, Sterling RS, Khanuja HS. Predictors of developing severe postoperative anemia and its consequences following total joint arthroplasty. Oral presentation at: Maryland Orthopaedic Association 2021 Annual Meeting; 2021 May 4 – 5
13. Mekkawy KL, Chaudhry YP, Hasan SA, **Rao SS**, Amin R, Oni JK, Sterling RS, Khanuja HS. Transfusion rates in the operative treatment of prosthetic hip and knee infection. Oral presentation at: Maryland Orthopaedic Association 2021 Annual Meeting; 2021 May 4 – 5

14. Mekkawy KL, Chaudhry, YP, **Rao SS**, Barry K, Puvanesarajah V, Amin R, Khanuja HS. Predictors of hospice discharge following surgical fixation of hip fracture. Oral presentation at: Maryland Orthopaedic Association 2021 Annual Meeting; 2021 May 4 – 5
15. Lobaton GO, Puvanesarajah V, **Rao S**, Ren M, D'Sa A, Deune EG. Natural Course of De Quervain's Tenosynovitis Treatment: A Retrospective Review of 1104 Patients. Podium Presentation. ASSH 76th Annual Meeting. September 30-October 2, 2021; San Francisco, California.

Book Chapters

1. Moran, Robert, **Rao S**, Li Z. Endoscopy for Distal Cholangiocarcinoma. (2015). Cholangiocarcinoma: From Diagnosis to Treatment. 1st edition. Hauppauge, NY: Nova Scian Publishers.

Books

1. Rao, A. & **Rao, S**. (2019). *Imagination Station: Exploring the Trailblazing Life of Pauli Murray*. Fairfax, VA: Rocket Science Productions, LLC.

Invited Lectures/Education

1. Johns Hopkins Hospital – Orthopaedic residency orientation – Common medical scenarios for the orthopaedic surgeon – Intern orientation 2017 – 2020
2. Johns Hopkins Hospital – Osler internal medicine residency noon lecture – Orthopaedics for the Internist – 2/2/20
3. Johns Hopkins Hospital – Internal medicine residency outpatient teaching session – Basics of the shoulder exam – bimonthly teaching session from 3/27 – 6/5/2020

Employment History:

01/2005 – 12/2013 Tennis Leaders Academy, LLC, Gaithersburg, MD
 Founder & Head Coach

09/2022 – present Washington Orthopaedics and Sports Medicine
 Attending Physician

Service

09/2018 Volunteer – Operation Walk Maryland: Georgetown, Guyana

Hobbies/Interests

1. Playing tennis/basketball/football
2. Wood working

Languages

1. English: Proficient/Fluent
2. Kannada: Proficient/Fluent