Sandeep J. Khandhar, M.D.

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skhandhar@cvtsa.com
DOB: 1975

EDUCATION

Duke University Medical Center, Durham, NC
Minimally Invasive Thoracic Surgery/Thoracic Oncology Fellowship: Jul 2006 – Jun 2007

University of Texas Health Science Center at San Antonio, San Antonio, TX
Cardiothoracic Surgery Fellowship: Jul 2004 – Jun 2006
American Board of Thoracic Surgery Certification. Jun 2008

University of Texas Health Science Center at San Antonio, San Antonio, TX
General Surgery Residency: Jul 1999 – Jun 2004
American Board of Surgery Certification. Dec 2005

Northwestern University Medical School, Chicago, IL
Doctor of Medicine: Aug 1995 – Jun 1999

Northwestern University, Evanston, IL
Bachelor of Science in Biomedical Engineering: Sep 1992 – Jun 1996
Concentration: Transport Processes with emphasis in Materials Science.

ACHIEVEMENTS

Northern Virginia Magazine Top Doctors Feb 2011
Selected by peers and local hospitals based on internal evaluation, patient reviews and overall quality of care

Washingtonian Top Doctors Mar 2010
The Washingtonian is a prominent, community magazine which features the area's best physicians in 39 specialties, as selected by other Washington-area physicians.

Resident Teacher of the Year (Fellow, Cardiothoracic Surgery) 2005 – 2006
Awarded for excellence in teaching medical students. First time awarded to a sub-specialty fellow. Fourth time recipient.

Legislative Awareness Internship Program May 2006
A two week program in Washington D.C. awarded to two residents/fellows nationally each year by the American Medical Association in an effort to afford residents and fellows the unique opportunity to participate in the political process of organized medicine at a national level

New Era Cardiac Care / Edwards Lifesciences Scholarship 2005
Awarded to a cardiothoracic surgery resident for the presentation of an innovative idea

Membership in the Arnold P. Gold Humanism Honor Society 2005
Honors residents recognized for "demonstrated excellence in clinical care, leadership, compassion and dedication to service." Organized to elevate humanism and professionalism within medicine.

The Gold Foundation Humanism and Excellence in Teaching Award 2004
Presented to a hospital resident by rising senior medical students for excellence in teaching and demonstrating humanism in interactions with patients, students, faculty and others

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Pfizer Surgical Residents' Grant Program 2004
A trip to the American College of Surgeons meeting awarded to one general surgery resident for excellence in overall performance

Resident Teacher of the Year, 5th of 5 post-graduate years (Chief) 2003 – 2004
Awarded to a general surgery resident for excellence in teaching medical students. Third time recipient.

Resident Teacher of the Year, 4th of 5 post-graduate years 2002 – 2003
Awarded to a general surgery resident for excellence in teaching medical students. In past years the award was always given to a Chief Resident. First time repeat recipient.

Resident Teacher of the Year, 3rd of 5 post-graduate years 2001 – 2002
Awarded to a general surgery resident for excellence in teaching medical students. In past years the award was always given to a Chief Resident.

Honors (3rd and 4th year medical school rotations)
Cardiac Care Unit, Medical Intensive Care Unit, Internal Medicine Sub-Internship, Internal Medicine, Primary Care, Pediatrics, Emergency Medicine, Ophthalmology, Radiology, Obstetrics and Gynecology, and Psychiatry

Bristol Myers-Squibb Scholarship Aug 1996
Granted for academic achievement in the field of medicine

Golden Stethoscope Award May 1996
Presented by the India Medical Association for excellence in academics

Dean's List 1992 – 1995
Seven of nine undergraduate quarters at Northwestern University

Honors Program in Medical Education, Northwestern University Apr 1992
7-year accelerated B.S./M.D. program, accepted during high school

ADMINISTRATIVE EXPERIENCE

Surgical Director, Thoracic Oncology Program, Inova Health System March 2009 – present

Medical Director, Thoracic Surgery, Inova Fairfax Hospital Jan2009 – present

Partner, CVTSA (Cardiac, Vascular & Thoracic Surgery Associates, P.C.) Aug2008 – present

Thoracic Surgery Residents' Association, Executive Committee
Representative to the American Medical Association's Resident/Fellow Section
Oct 2005 – Jun 2007

Administrative Chief Resident, Cardiothoracic Surgery UTHSCSA May 2005 – Jun 2006

Administrative Chief Resident, General Surgery UTHSCSA
A peer selected, faculty appointed position to oversee 72 residents
Apr 2003 – Jun 2004

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Resident Representative Member on the Residency Education Committee
Dec 2002 – Jun 2004

Resident Representative Member on the Graduate Medical Education Committee
Jul 2003 – Jun 2004

Peer Selected Resident Representative of the General Surgery Department to the ACGME (Accreditation Council for Graduate Medical Education) Institutional Review Board
Apr – May 2003

Peer Selected Resident Representative to the ACGME Work Hours Task Force
Dec 2002

Appointment to the NBME® (National Board of Medical Examiners®) Resident Evaluation Advisory Committee
Jun 2000

PRESENTATIONS and PUBLICATIONS

Chhina MK, Nathan SD, Emblom-Callahan MC, Ahmad S, Shlobin OA, Lemma M, Chang JE, Brenner R, Khandhar S, Grant GM. **Anti-fibrotic Effect of Curcumin on Primary Fibroblasts from IPF Lungs**. *CHEST meeting,* 2010.

Chhina MK, Nathan SD, Emblom-Callahan MC, Ahmad S, Shlobin OA, Lemma M, Chang JE, Brenner R, Cox D, Iyer EP, Khandhar S, Grant GM. **Immunohistochemistry Analysis for Proliferation Marker in IPF Lung Tissue**. *CHEST meeting,* 2010.

Chhina MK, Nathan SD, Emblom-Callahan MC, Ahmad S, Shlobin OA, Lemma M, Chang JE, Brenner R, Khandhar S, Grant GM. **Anti-fibrotic Effect of Curcumin on Primary Fibroblasts from IPF Lungs**. *American Journal of Respiratory & Critical Care Medicine*, May 2010.

> Curcumin exposure was associated with significant reductions in IPF-F, normal-F and MRC-5 cell numbers, potentially due to inhibition of proliferation and/or induction of apoptosis. Fibroblast activation markers were also significantly reduced in the IPF-F, indicating potential deactivation of these cells. This was associated with a reduction in ECM which is supportive of downstream functionality. The epithelial A549 cells showed comparative insensitivity to curcumin, suggesting epithelial cell resistance and fibroblast-specific activity. This data highlights the efficacy and fibroblast cell specificity of curcumin and supports further investigation of this agent as a potential therapy for IPF.

Chhina MK, Nathan SD, Emblom-Callahan MC, Ahmad S, Shlobin OA, Lemma M, Chang JE, Brenner R, Khandhar S, Grant GM. **Anti-fibrotic Effect of Curcumin on Primary Fibroblasts from IPF Lungs**. *Metropolitan DC Respiratory Society meeting,* April 2010.

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Chhina MK, Nathan SD, Emblom-Callahan MC, Ahmad S, Shlobin OA, Lemma M, Chang JE, Brenner R, Cox D, Iyer EP, Khandhar S, Grant GM. **Immunohistochemistry Analysis for Proliferation Marker in IPF Lung Tissue**. *Metropolitan DC Respiratory Society meeting,* April, 2010.

Khandhar S, Nitzschke S, Ad N. **Left Atrioesophageal Fistula Following Catheter Ablation for Atrial Fibrillation: Off-bypass, Primary Repair Using an Extrapericardial Approach.** *Journal of Thoracic & Cardiovascular Surgery* 139(2): 507-9, Feb 2010.

King CS, Khandhar S, Burton N, Shlobin OA, Ahmad S, Lefrak E, Barnett SD, Nathan SD. **Native Lung Complications in Single-lung Transplant Recipients and the Role of Pneumonectomy.** *Journal of Heart and Lung Transplantation* 28(8):851-6, Aug 2009.

> Single-lung transplant recipients may develop complications in their native lungs that may have an impact on outcomes. One potential therapeutic option is native lung pneumonectomy. The purpose of this study was to assess the impact of native lung complications on post-transplant survival in single-lung transplant recipients. We also aimed to determine the morbidity and mortality associated with native lung pneumonectomy (NLP). A retrospective review of all single-lung transplant recipients at our institution from January 1, 1998 to July 15, 2008 was performed. Patients were stratified to one of three groups: no native lung complications; native lung complications requiring native lung pneumonectomy; and native lung complications not managed with native lung pneumonectomy. Survival post-transplant and post–native lung complication were the primary end-points of the study. Significant native lung complications developed in 25 of 180 single-lung transplants (13.8%). Median post-transplant survival was lower in single-lung transplant recipients with significant native lung complications (3.2 years vs 5.3 years, *p* _ 0.002). NLP was performed in 11 patients. Post-operative complications developed in 4 of 11 cases (36.4%), but all patients survived to hospital discharge. There was no significant difference in median survival between single-lung transplant recipients undergoing native lung pneumonectomy and single-lung transplant recipients without native lung complications (4.3 years vs 5.1 years, *p* _ 0.478). Native lung complications impact post-transplant survival in single-lung transplant recipients and may partly explain why outcomes with single-lung transplantation are inferior to those of bilateral lung transplantation. NLP can be performed with acceptable morbidity and mortality.

Malin E, Kiernan PD, Sheridan MJ, Khandhar SJ, Fraser C, Hetrick V. **Multimodality Treatment for Esophageal Malignancy: the Roles of Surgery and Neoadjuvant Therapy.** *American Surgeon* 75 (6): 489-97, Jun 2009.

> The best curative treatmentfor esophageal malignancy remains controversial. In 2003, we presented our institution's experience with 124 patients treated from 1990 to 2001. Here we update that experience with an additional 6 years' data. A total of 221 patients underwent surgical resection from 1990 to 2007; 128 had up-front surgery, 88 underwenr surgery after neoadjuvant radiation and chemotherapy (NARCS), and five underwent surgery after neoadjuvant , single-agent therapy. Principle outcomes of interest were 30-day and in-hospital mortality as well as 3- and 5-year survival rates. Overall3- and 5-year survival rates were 38 and 33 per cent. NARCS achieved complete pathologic result in 32 per cent of patients with corresponding 3- and 5-year survival rates of 58 and 53 per cent. The 3- and 5-year survival rates for all patients undergoing NARCS were 36 and 31 per cent versus 24 and 18 per cent for patients with up-front

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surgery for anything over Stage I disease (P = 0.01). The 3- and 5-year survival rates for patients with up-front resection of Stage I disease were 78 and 70 per cent. Overall, 30-day and in-hospital mortalities were 1.8 and 2.3 per cent. Since January 1, 2000, hospital mortality has been less than 0.8 per cent. We prefer NARCS for malignancy of the esophagus, except in tose patients with high-grade dysplasia (carcinoma in-situ), suspected Stage I disease, poor performance status, or urgent/emergent circumstances.

Khandhar SJ, Johnson SB, Calhoon JH. **Overview of ThoracicTrauma in the United States.** *Thoracic Surgery Clinics* 17(1): 1-9, Feb 2007.

The treatment of thoracic trauma continues to evolve over the years. It has been well established that 25% of traumatic deaths are secondary to injuries to the thorax. The vast majority of patients with injuries to the chest (~75%) can usually be managed expectantly with simple tube thoracostomy and volume resuscitation. As a result, initial care of these patients is usually straightforward and often performed adequately by emergency room physicians and general surgeons. However, tertiary care of these patients is often multidisciplinary in nature, and communication with the thoracic surgeon is essential in order to minimize mortality and long-term morbidity. Improvement in the understanding of the underlying molecular physiologic mechanisms involved in the various traumatic pathologic processes, as well as the advancement of diagnostic techniques, minimally invasive approaches and pharmacologic therapy, all continue to contribute to decreasing the morbidity and mortality of these critically injured patients.

Johnson SB, Deel JT, Khandhar SJ, Presser ER, Calhoon JH. **Cardiac and Lung Transplantation.** Chapter 20: In *Essential Emergency Medicine: for the Healthcare Practitioner, 2007 by Steven W. Salyer; Saunders/Elsevier ISBN: 1416029710.*

Patients that have had a heart transplant, or a lung transplant, or are on the waiting list for the same, usually have one or more of the following problems when presenting to an emergency room: heart failure, pulmonary failure, rejection, or infection. For any of these acute problems, one must remember the simple ABC's – airway, breathing, and circulation. Care-givers that are not familiar with pre or post thoracic transplant patients may find themselves at times overwhelmed with the complexity of a patient's illness and the medicines they may be on to treat their underlying disease or prevent allograft rejection. If one just keeps in mind that most transplant related life-threatening problems are treated with usual supportive care, the care-giver can confidently initiate life-saving therapy in a more timely fashion.

Heart and Lung Surgeons Join Congress to Confront Surgeon Shortage: *Latest Residency Match Shows Many Cardiothoracic Residency Positions Remain Unfilled.* STS Press Conference, Washington D.C. June 20, 2006

Sandeep Khandhar, MD, a cardiothoracic surgery resident at the University of Texas Health Science Center at San Antonio, summed it up. "When my medical school colleagues and I graduated, many of them selected specialties that offer regular hours, like dermatology, and whose reimbursements are not being cut to

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> the bone. I can understand that for many, even training to be the most highly-skilled surgeon can lose its appeal if it's apparent that the deck is being stacked against you. Without Congress stepping in to make some changes, the appeal of cardiothoracic surgery will continue to dwindle."

Allan PF, Kelley TC, Taylor TL, Abouchahine S, Leininger BE, Mueller DL, Khandhar SJ, Sako EY, Carpenter AJ. **Bronchial Transection: Diagnosis and Management.** *Clinical Pulmonary Medicine* 2006; 13(3): 203-209.

> Tracheobronchial injury, as a consequence of blunt chest trauma, encompasses a spectrum of airway damage, including complete bronchial transection, transmural and nontransmural bronchial lacerations. The rarity of the injury has resulted in descriptions limited to anecdotal reports and case series largely published within thoracic surgery and trauma literature. This case report discusses aspects of an often unappreciated process with a variety of acute and delayed complications, all of which are infrequently discussed in clinical pulmonary medicine.

Adenocarcinoma of the Lung along with a Lesion of Coccidioidomycosis, San Antonio, TX

> Interesting case presentation given at the 1st annual Updates in Lung Cancer Treatment Symposium

Apr 2006

Introducing the Technology of Today to Every Part of the World, Newport Beach, CA

> A presentation given to the product development group at Edwards Lifesciences as part of the New Era Cardiac Care Conference chaired by Dr. Randolph Chitwood and Dr. Mehmet Oz. The presentation produced ideas for the effective delivery of cardiothoracic surgical care in Third World areas.

Jan 2006

City-Wide Cardiothoracic Surgery Grand Rounds Presentations, San Antonio, Tx

AMA/TSRA Legislative Awareness Fellowship
Pulmonary Metastasectomy
Pulmonary Carcinoid
Recombinant Factor VIIa: Clinical Applications in Cardiac Surgery
Esophagectomy: When Not to Do It
Bicuspid Aortic Valve
Pulmonary Fungal Infections
Post-infarct Ventricular Septal Defect
Cardiopulmonary Bypass and Pregnancy
Aortic Root Abscess
Controversies in Esophageal Resection
Management of the Small Aortic Root
Abdominal Complications after Cardiopulmonary Bypass
Epiphrenic Diverticulum
Nesiritide: Current Use and Future Applications

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Caustic Injestions
Protamine
Blunt Bronchial Injuries

2004 – 2006

Old Ideas and New Strategies in the Treatment of Shock, San Antonio, TX
Grand Rounds presentation to the Department of General Surgery

May 2004

EXPERIENCE

Cardiac, Vascular & Thoracic Surgery Associates P.C., Falls Church, VA
Thoracic Surgeon
Built the minimally invasive thoracic surgery program at Inova Fairfax Hospital. Did the first thoracoscopic lobectomy in the Inova Health System. Co-medical director and founder of Inova's Thoracic Oncology Program. Initiated participation in the General Thoracic Surgery Database system.

Aug 2007 – present

Allograft Resources, University of Texas Health Science Center, San Antonio, TX
Cardiovascular Surgical Specialist for Organ Procurement

Sep 2004 – Jun 2006

India Medical Association Summer Mentorship, Chicago, IL
Interacted with four community physicians on a one-on-one basis. Developed first hand experience and understanding of private practice; managed care; physicians' time management skills between hospital, teaching, and private office responsibilities; and communication skills necessary between physician and patient in a primary care setting.

Summer 1996

Barrow Neurological Institute, Phoenix, AZ

Research Intern, Division of Neurobiology, Dr. James Bloedel and Dr. Alan Gibson.
Trained cats and monkeys to carry out various reaching tasks. Assisted with reach-to-grasp experiments and implantation surgeries. Performed histological procedures including freezing brain tissue, cutting/mounting sections onto slides, and staining. Became proficient in tissue image processing using Adobe PhotoShop. Prepared electrodes for cellular recordings in the brain and assessed and evaluated this data.

Summer 1995

Research Intern, Motor Systems Lab, Dr. James Bloedel
Cared for animals. Carried out classical conditioning experiments involving how cats learn to reach and grasp a bar. Organized, analyzed, and reported raw data.

Summer 1994

Research Intern, Cerebellar Division, Dr. James Bloedel

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Learned basic histological techniques. Assisted and observed rabbit eye-blink experiments and implantation surgeries. Created cerebellar drawings for publication.

Summer 1993

Northwestern University, Evanston, IL
Health Aid
Provided fellow students with immediate medical attention for physical and emotional well being. Served as a liaison between students and the Health Service. Became certified in CPR and First Aid.

Sep 1993 – Jun 1995

Northwestern University, Evanston, IL
Research Assistant, Department of Biochemistry, Dr. Richard Knop
Attained knowledge of cell culture and maintained cell lines.

Sep 1993 – Jan

1994

ACTIVITIES/ASSOCIATIONS

Thoracic Surgery Residents Association

Society of Thoracic Surgeons, Candidate Member

Arnold P. Gold Humanism Honor Society

J. Bradley Aust Surgical Society

American College of Surgeons, Candidate Member

Devon Clinic, Chicago, IL
Volunteered at a free clinic assisting local physicians in an underserved, Indian community.

Winter 1996 – 97

National Primary Care Week, Chicago, IL
Recruited guest speaker and organized panel discussion on career diversity in primary care.

Oct 1996

Patient Perspectives Program - Rehabilitation Institute of Chicago, Chicago, IL
Interacted with a patient at the RIC in order to understand the overwhelming psychological and social issues involved in a spinal cord injury. Participated in wheelchair and muscle conditioning classes.

Winter 1995 – 96

INTERESTS

Professional: Thoracoscopic applications in the management of benign and malignant pulmonary disease.

Personal: Traveling with family, International healthcare, Tennis, Racquetball.