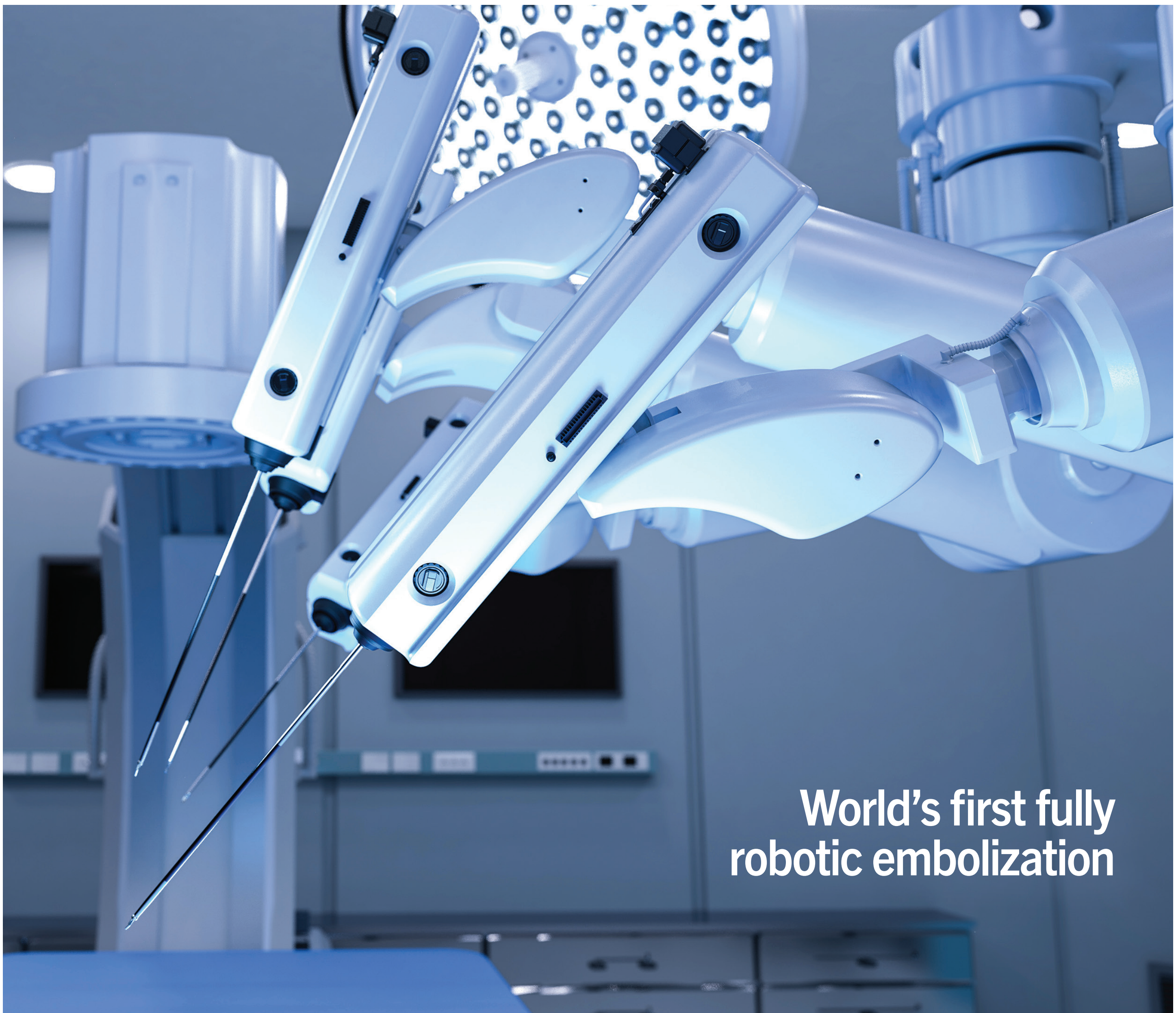
UCLA Health

UCLA Radiology

NEWSLETTER OF THE DEPARTMENT OF RADIOLOGICAL SCIENCES

SUMMER 2022



Chair's Message

Dieter Enzmann, MD

Distinguished Professor of Radiology

Leo G. Rigler Chair

Executive Medical Director, UCLA Health

Department of Radiological Sciences

David Geffen School of Medicine at UCLA

As we enter the late-COVID era, we can begin to rejuvenate a cornerstone of UCLA Radiology culture, collegiality. Re-engaging on an interpersonal level offers us the opportunity to not only reshape and strengthen our departmental culture for a hybrid work environment, but to also ensure faculty who joined us in the COVID-constrained era understand, enjoy and acclimate to it. We can also focus anew on our clinical, research and educational growth plans. While it's a great simplification of our vision and mission, I am making up a departmental "VisMis" statement: "To be the most creatively innovative radiology department in the nation by integrating AI enriched diagnostic imaging with forefront image-guided treatment."

This newsletter highlights some examples of continued creative innovation in diagnostic imaging: clinically useful free-breathing MR imaging of the liver, higher resolution of multiplanar MRI and diagnostically meaningful increased spatial resolution in the visualization of critical inner ear structures, which is particularly important in conditions difficult to diagnose clinically such as Meniere's disease. Our head and neck neuroradiology group sought leadership in this challenge because conventional middle and inner ear MR imaging has fallen short of providing a definitive diagnosis. These select examples represent only a small slice of much broader creative innovation thriving in the department.

In the VisMis statement, diagnostic imaging is only half the story. The other half is image-guided treatment (IgRx). The consistent, long-term departmental strategy is integrating both halves. Preceding and linked to IgRx is image-guided diagnosis (IgDx). IgDx is currently manifest primarily as tissue acquisition through biopsies. Nationwide, biopsy failure rates are quite high, but fortunately UCLA Radiology — in a clear counter trend — has a very high success rate in performing diagnostic biopsy procedures. Precision medicine relies heavily on variegated means of tissue analysis and UCLA Radiology seeks to be a leader in wide-ranging tissue acquisition techniques. We have formed a biopsy task force so this vital role in precision medicine can be scaled up. To further expand our biopsy repertoire, Dr. Ravi Srinivasa is showing creativity and innovation in developing percutaneous biliary endoscopy to increase the success rate of accurate tissue diagnosis in this anatomic location. This is an example of UCLA Radiology redesigning IgDx using percutaneous fiber optic image guidance in biopsy technique.

In conjunction with IgDx, we are continuing to grow IgRx by having it performed beyond the traditional IR subspecialties to include virtually all other subspecialty sections in the department. This broadens the scope and reach of IgRx applying its integration.

As the cover indicates, another direction of creative innovation is the development and application of robotics in IgRx. A near-term opportunity is robotic tele-angiography. Previous newsletters[1] have highlighted IgRx in the embolization of hypervascular tissues (benign prostatic hypertrophy [BPH] in Winter 2021 and Spring 2018; knee osteoarthritis in Summer 2019; and uterine fibroids[2]). These IgRx procedures can benefit from tele-angiographic robotics. Creative innovation in robotics encompasses not only further technical advances in robots, which are still in their early developmental stage, but importantly parallel advances in the design of proper clinical procedures to efficiently and effectively use robots in everyday clinical practice. Both technical and practical workflow improvements are facilitated by our motivated, talented faculty using the Translational Research Imaging Center facility to investigate safe, clinical uses. Our robotic initiatives accelerate the dissemination of IgRx into communities currently not afforded easy access to beneficial IgRx, helping to fulfill our community engagement missions.

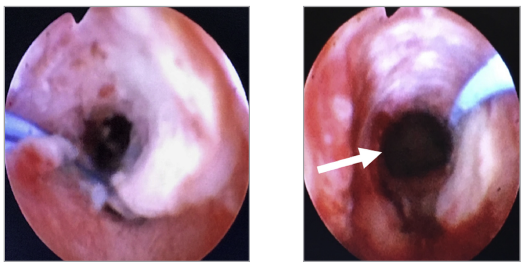
We are all grateful to see the severe COVID era phasing out, thereby ushering in a resumption of creative innovation. UCLA Radiology is proud and fortunate enough to have resourceful faculty, staff and administration to deliver on the VisMis statement of being the most creatively innovative radiology department in the nation, spanning all of our clinical, research, training and community service missions.

[1] https://www.uclahealth.org/radiology/newsletter
[2] https://www.uclahealth.org/radiology/workfiles/forpatients/CU201602_Fibroids.pdf

Percutaneous biliary endoscopy provides access and visualization to treat challenging conditions

Ravi N. Srinivasa, MD, FSIR
Associate Professor of Radiology
Interventional Radiology
Department of Radiological Sciences
David Geffen School of Medicine at UCLA

Percutaneous biliary endoscopy offers an effective way for interventionalists to perform procedures under direct, three-dimensional, color visualization in real time. Percutaneous endoscopy enables interventionalists to evaluate the biliary system and treat biliary strictures and stones that may be difficult to access by conventional endoscopy. The availability of this treatment can be especially advantageous for patients who would otherwise be stuck with biliary drains or cholecystostomy tubes for life. In addition, the use of percutaneous endoscopy can greatly improve the diagnostic yield of biopsy tissue.



Patient with indwelling biliary drain for over a decade due to benign biliary stricture. Image at left shows white scar tissue at anastomosis. Image at right following percutaneous laser stricturotomy and cholangioplasty by interventional radiologist shows significant luminal gain. Patient's drain was successfully removed one week following intervention.

Biliary strictures

UCLA interventional radiologists have been using endoscopic laser stricturotomy to treat patients with restricted bile-duct flow to the intestine due to strictures at biliary anastomosis sites. Liver-transplant recipients and those who have had a pancreaticoduodenectomy (Whipple procedure) to treat disorders of the pancreas, intestine or bile duct often develop anastomotic strictures from scar tissue that forms at the bile duct anastomosis site, limiting or blocking the flow of bile and causing it to pool in the liver where it can result in cholangitis and/or liver dysfunction. Conservative therapies, including balloon dilation, most frequently fail to restore adequate functionality. "The stricture just doesn't stay open because the scar tissue is still there," explains Ravi N. Srinivasa, MD, associate professor of clinical radiology, Division of Vascular and Interventional Radiology. "We have previously tried putting in large-bore drains to try to passively dilate these strictures. We'll try repeat ballooning or stents. None of these techniques have shown any durable results."

Endoscopic laser stricturotomy allows interventional radiologists to incise scar tissue very precisely to minimize the chance of injury to adjacent structures while obtaining the desired margin of scar tissue to allow better flow through the bile duct. "For many patients who have been stuck with biliary drains for years and years, the procedure can potentially be life-changing. They don't have to come to the hospital every six months to get their tubes changed. They don't have to perform drain care," says Dr. Srinivasa.

UCLA is preparing to launch the first prospective study of endoscopic laser stricturotomy. "The preliminary data has been very encouraging," says Dr. Srinivasa, "and the data we have retrospectively on patients we've treated at UCLA has been very promising."

Stone disease

Patients who have altered biliary anatomy due to previous surgery — including hepaticojejunostomy and choledochojejunostomy — can develop stones above the level of strictures in the revised anatomy. Removing stones in these patients using standard endoscopic procedures can be very challenging for gastroenterologists. Some patients who develop bile duct stones can be difficult to treat even in the absence of surgically altered anatomy, including those who have duodenal diverticulum.

Patients whose gallbladder stones have led to cholecystitis, and who are not candidates for cholecystectomy due to age or medical comorbidities, may require gallbladder drains until definitive treatment is possible. Percutaneous endoscopy enables interventional radiologists to access the gallbladder through the existing drain, which is then removed and the gallbladder is cleared of stones using a laser or ultrasonic lithotripter to fragment the stones and a basket or suction to retrieve the debris. "We are able to get the drain out with this procedure," says Dr. Srinivasa, "and older patients with cholecystostomy tubes are not stuck with drains for the rest of their lives. It greatly improves quality of life for these patients who are not surgical candidates."

Direct-visualization biopsies

"In the past, many biopsies in the bile duct were not of diagnostic value because they were just brushings or blind biopsies," explains Dr. Srinivasa. "Doing biopsy under direct visualization has significantly improved the yield."

Direct visualization biopsy has proved especially beneficial in instances — such as localized cholangiocarcinomas — where interventional radiologists are able to direct the scope into the segmental bile duct and take biopsies based on visualization of the abnormality. Two-dimensional fluoroscopy-guided procedures cannot offer similar accuracy or diagnostic certainty.

Training in percutaneous endoscopy techniques

As pioneers in the use of percutaneous biliary endoscopy, UCLA interventionalists have been active in training others in their techniques. Dr. Srinivasa has taught courses throughout the country and internationally. He has also collaborated with the endoscope manufacturers to develop 3D silicon molds to emulate the biliary tree, which he uses in his courses to train others in percutaneous biliary endoscopy techniques.

Free-breathing MRI improves diagnosis and monitoring of NAFLD

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Non-alcoholic fatty liver disease (NAFLD) is the most prevalent chronic liver disease in Western societies, having paralleled the increase in obesity and type II diabetes. NAFLD is associated with increased risk of cardiometabolic disease. With pediatric obesity on the rise, NAFLD is also the most common chronic liver disease in children. A portion of NAFLD patients go on to develop non-alcoholic steatohepatitis (NASH), a very aggressive form of the disease that causes liver tissue inflammation and fibrosis. NASH patients are at risk for cirrhosis, liver cancer and liver failure.

Magnetic resonance imaging (MRI) has become the preferred method of diagnosing and monitoring liver fat and iron, with magnetic resonance elastography (MRE) adding the ability to characterize liver tissue stiffness, which is related to fibrosis. But MR use is constrained by the need for patients to suspend breathing during the scan to minimize motion artifacts in the images. A team of scientists, engineers and physicians at UCLA has developed a new technology that can acquire data from liver MR scans as patients breathe normally (free-breathing MRI and MRE). "We can measure motion during the free-breathing scan and compensate for motion to create high-quality maps of liver fat, iron and stiffness," says Holden Wu, Ph.D., associate professor of radiology, bioengineering and physics and biology in medicine at UCLA.

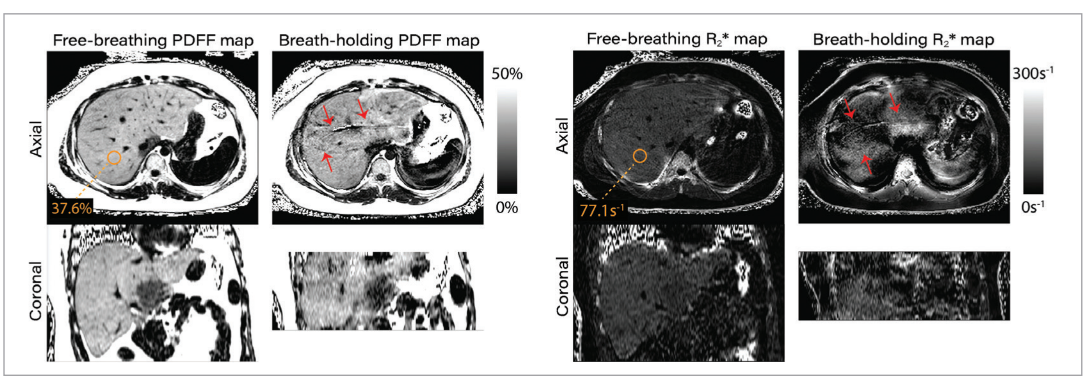
Whereas conventional liver MR scans rely on Cartesian sampling, which is sensitive to motion and requires patients to breath-hold, Dr. Wu and his colleagues have developed a new free-breathing MR method using non-Cartesian radial sampling that "is more robust and gives us more information we can use to measure and compensate for motion," explains Dr. Wu, while also "encoding all the information we need to reconstruct the quantitative maps for measuring liver tissue properties."

The team's free-breathing liver MR package — which is still in pre-clinical development, though it is transitioning to the clinical investigation phase — can be applied to clinical MR scanners currently in widespread use. Prototypes are already available for two field strengths — 1.5T and 3.0T — and the team is continuing to work with an industry partner to develop the package for different scanner software versions.

Dr. Wu and the team have published data comparing free-breathing liver MRI quantitative maps with standard breath-holding maps. "We selected only those subjects who can breath-hold so we can make a comparison," says Dr. Wu. "Even then, we noticed that a lot of subjects can't breath-hold very well and we had to make our comparisons in regions that didn't have artifacts from insufficient breath-holding." In these comparisons, maps produced using the free-breathing radial sampling technique matched up well with those produced using the standard breath-holding Cartesian sampling technique. In terms of image quality, "in challenging populations such as children and infants, our free-breathing technology achieved significantly better image quality by overcoming the challenges of breath-holding," says Dr. Wu.

The ability to acquire high quality-images and accurate quantitative maps of fat, iron and tissue stiffness in the livers of pediatric patients is an area of increasing interest as researchers — including Dr. Kara Calkins (Pediatrics), Dr. Shahnaz Ghahremani (Pediatric Radiology) and colleagues at UCLA — continue to find evidence that risk factors for liver disease often manifest well before adulthood. "If we can identify the early signs of the disease and intervene sooner, that could help avoid the future development of NAFLD and more severe forms of the disease," explains Dr. Wu.

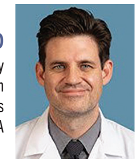
In addition, the team is developing new methods of handling data undersampling in order to produce high-quality images and maps even when some data is missing from the free-breathing MRI scan due to motion compensation or scan acceleration. "Most recently, this has led us to develop deep-learning methods where we use substantial amounts of curated data to train deep neural network models for MRI reconstruction and mapping," says Dr. Wu. Their aim in developing this artificial intelligence system is to create high-quality liver images and maps very rapidly, which will further enhance the advantages of using free-breathing MRI to diagnose and study NAFLD. R



A 17 year-old female with non-alcoholic fatty liver disease had a 3T MRI research scan to measure proton-density fat fraction (PDFF) maps for assessing liver fat and R_2* maps for assessing liver iron. **Standard breath-holding Cartesian MRI (18 sec) had prominent motion artifacts** (red arrows) due to breath-holding challenges. **The new free-breathing radial MRI method (4 min 6 sec) provided high-quality PDFF and R_2* maps without motion artifacts**, and also achieved larger volumetric coverage as the scan time was not limited by breath-holding capability.

New MRI protocol enables imaging of fluid filled structures of the inner ear

Luke N. Ledbetter, MD
Associate Professor of Radiology
Director of Head and Neck Imaging Program
Department of Radiological Sciences
David Geffen School of Medicine at UCLA



Meniere's disease is associated with symptoms of fluctuating hearing loss, positional vertigo, aural fullness and tinnitus. These symptoms can range from mild to severe, with some patients at risk of injury from falls due to vertigo. Endolymphatic hydrops — too much fluid within the membranous structures that make up the endolymphatic spaces of the inner ear — causes the hearing and balance symptoms in Meniere's patients.

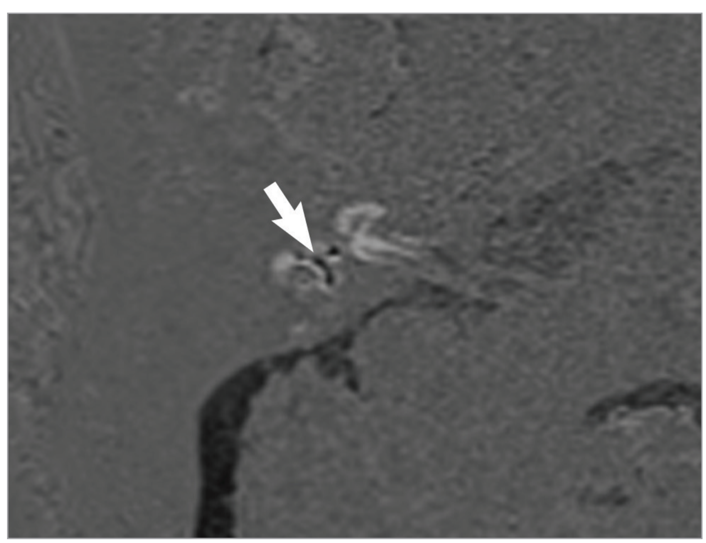
"Meniere's disease diagnosis and treatment decisions have been largely based on clinical presentation," states Luke Ledbetter, MD, associate clinical professor of radiological sciences. "Classically, we've not been able to image these endolymphatic spaces inside the inner ear." This is starting to change with the use of high-resolution delayed-intravenous-contrast MRI. UCLA was one of the first institutions working on this imaging technique and remains among a relative handful that offer it in clinical practice through its Meniere's MRI imaging program.

The membranous structures involved are very small — less than a millimeter in size. Conventional MRI studies cannot resolve the boundaries between the endolymphatic spaces and the surrounding perilymphatic spaces. Two developments that made the new imaging study possible are a better understanding of the dynamics of contrast along with technology advances in the imaging coils. Early attempts at imaging the endolymphatic spaces relied on intratympanic injection (through the eardrum) of contrast, followed by a 24-hour wait for the contrast to diffuse through the relevant structures. "Over time, we found out that we can instead give patients contrast intravenously — as we do for other MRI exams — and wait four hours for the contrast to get into these inner-ear structures," explains Dr. Ledbetter. The contrast spreads to the perilymphatic fluid, but not to the endolymphatic fluid. The endolymphatic structures — the utricle, saccule and cochlear duct — are thus revealed as dark areas against the bright perilymphatic fluid.

On the technology side, very small coils that sit like headphones on the patient's head are able to capture very-high-resolution images of very small structures. "If we try to look at these structures on a routine MRI, they all just look like fluid — we don't see the membrane separating perilymphatic from endolymphatic," explains Dr. Ledbetter. But with high-resolution delayed-intravenous-contrast MRI, neuroradiologists can now image the endolymphatic structures of the inner ear and reveal the changes in their size that result from the increased fluid pressure of endolymphatic hydrops. Not only can neuroradiologists visually confirm endolymphatic hydrops, they can also determine which structures are affected. UCLA neuroradiologists have found over the course of many such studies that abnormal imaging findings correspond well with patients' reports of their symptoms. "We find that with patients who have just the hearing component, for example, we see hydrops in the cochlea but not in the utricle or saccule," reports Dr. Ledbetter. "With these imaging findings, we're breaking down sub-categories of patients and explaining the symptoms patients have with what we see on imaging."

For Meniere's disease patients who don't respond to conservative therapies, and whose symptoms are sufficiently debilitating, surgical intervention is often considered. In such cases, imaging that reveals the abnormal structures can be particularly valuable in helping to inform treatment decisions and guide invasive procedures. But high-resolution delayed-intravenous-contrast MRI has value for a broader range of Meniere's patients. "Otologists often order conventional MRI of patients with hearing or balance symptoms to rule out things like a mass affecting one of the nerves," explains Dr. Ledbetter. "Our protocol includes the same type of images, so at the same time you rule out other causes, you get very specific information about what's going on in the endolymphatic spaces."

Dr. Ledbetter also points out that Meniere's disease symptoms of fluctuating hearing loss, aural fullness and vertigo can be hard to quantify. With the new imaging protocol, "there's an ability to be more accurate. We can narrow the diagnosis down to patients who have the anatomic changes that we were never able to see in the past." R



Normal patient Menieres substraction image. The normal utricle containing endolymph is black (white arrow) and the surrounding perilymph is white.

A novel artificial intelligence technique for generating through-plane super-resolution MRI images

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A team of UCLA researchers has been developing new artificial intelligence techniques to use multi-slice two-dimensional MRI scans to produce high-resolution MRI images in orthogonal imaging planes other than the one used to acquire the original 2D slices. Each slice of a multi-slice 2D MRI image has high resolution in its own imaging plane, but its slice thickness or through-plane resolution is much thicker (e.g., 3-6 mm), yielding low-resolution multi-planar reformation with staircase artifact due to elongated voxels. This shortcoming can be addressed by acquiring images in multiple planes — axial, coronal or sagittal — but that is time-consuming, making them less clinically efficient.

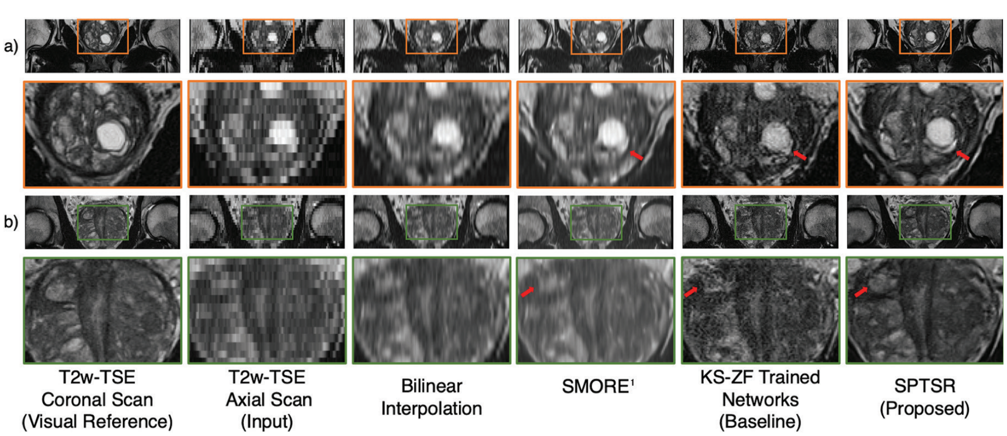
Combining deep learning with super-resolution MRI, the UCLA team has developed a novel technique for generating through-plane high-resolution MRI images that can meet the clinical needs of radiologists in evaluating patients with suspected pathologies. “By using these techniques to produce high-resolution MRI images from multiple 2D scans done in a single imaging plane, we can achieve three-dimensional isotropic super-resolution with high time efficiency via deep generative artificial intelligence,” explains Kyung Sung, Ph.D., Associate Professor of Radiological Sciences at UCLA.

Known as slice-profile transformation-based super-resolution (SPTSR), a pair of coronal and axial MRI scans were used to train deep generative networks to generate through-plane super-resolution MRI images. In particular, approximately 5,000 pairs of axial and coronal turbo spin-echo (TSE) prostate MRI scans — including scans from a variety of MRI scanners — were used in training the deep generative adversarial networks. Validation and testing were done using independent scan pairs from a further 430 subjects.

To test their SPTSR method, the team turned to two genitourinary radiologists who read prostate MRIs in their routine clinical practices. The two compared the quality of the SPTSR through-plane super-resolution MRI images with separate orthogonal in-plane scans that served as a visual reference. In addition to SPTSR, the testers evaluated images produced by other state-of-the-art image-enhancement methods, including bilinear interpolation, SMORE, and KS-ZF AI algorithms. Testers evaluated the images on sharpness, artifacts, noise and overall quality. The proposed STPSR method received an almost perfect overall image-quality score, with both testers ranking SPTSR highest overall in all testing cases. As a result of the through-plane high-resolution images, SPTSR produces thinner virtual slices, generating 110 compared to 20 slices in the original scans.

“If you compare the output of our SPTSR method to the reference image of in-plane imaging, they are very comparable to each other,” says Dr. Sung. “Some of the visual differences between the SPTSR output and the reference in-plane scan are due to the fact that they were acquired at different times, and some patient movement can be included. The fact that a structure seen on the reference scan doesn’t have an exact corresponding structure on the AI output doesn’t indicate a failure of the AI process. If we see a lesion in the reference image, we should see one in the SPTSR image as well, but the exact shape and location may vary.”

Through-plane super-resolution imaging has been a very challenging problem in MRI for a long period of time. Dr. Sung and his colleagues believe that it can be overcome at last with the aid of artificial intelligence. “We’re proposing a new artificial intelligence method that can improve the through-plane resolution of MRI better than existing AI methods.” Dr. Sung also points out that the technical advances they’ve demonstrated in prostate MRI using SPTSR can be applied to other MRI applications. “We are showing and validating the proof of concept,” explains Dr. Sung, “but there is more potential to explore in various imaging applications.”



[1] Zhao C. IEEE TMI. (2021)

Comparison of STPSR to available through-plane imaging methods. Rows a and b are slices from two of 30 testing subjects, in full-frame and cropped to the area of interest. The first two columns show the in-plane coronal scan used as a visual reference and the unenhanced through-plan axial image. The final four columns show the four through-plane methods being tested, with the UCLA team’s SPTSR images in the right column. SPTSR produces through-plane images that are closer to the reference image than the other methods tested.

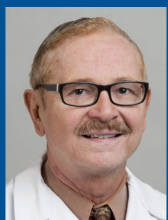
UCLA Radiology expands into North Hollywood

The UCLA Department of Radiology brings world-class expertise to the North Hollywood community with the launch of our UCLA North Hollywood Imaging and Interventional Center. The new facilities opened in October 2021, occupying two floors that cover more than 12,000 square feet. Over 100 UCLA radiologists bring a wealth of expertise to the community, with subspecialists available to interpret specialized studies. Our Imaging and Interventional Center brings the latest and most innovative technologies to the community, including the Siemens MAGNETOM Vida 3-Tesla MRI. This scanner has the latest advances that allow it to adapt to the patient's body and movement, resulting in higher-quality images while increasing patient comfort. The Siemens Drive CT has dual-source capability, resulting in high-quality images, and supports specialty studies including gout and cardiac evaluations.

North Hollywood residents will also be able to receive interventional radiology procedures closer to home. The center will be able to perform procedures that were previously available only in hospitals or ambulatory surgery centers, like endovenous laser treatment. Patients requiring image-guided biopsies, drainages, ports, IVC filters and PICC lines will have the option to go to a community imaging center rather than recovering at a hospital. At our Women's Imaging Center, 3D mammography, breast ultrasounds and breast biopsies are offered in a female-only setting designed to promote ease and comfort. 3D mammography has been shown to have 40 percent greater specificity and 15 percent fewer call backs for additional patient evaluations than traditional mammograms.

UCLA Health North Hollywood Imaging and Interventional Center
4343 Lankershim Blvd., Suites 300 & 200, North Hollywood, CA 91602
Central Scheduling: 310-301-6800
uclahealth.org/radiology/noho

Nanette DeBruhl, MD, contributes $250,000 in memory of Dr. Lawrence W. Bassett



Nanette DeBruhl, MD, has contributed $250,000 in memory of Dr. Lawrence W. Bassett (RES ’74). The late Dr. Bassett, who passed away in December 2020, was a member of the UCLA faculty since 1974 and held the Iris Cantor Endowed Chair in Breast Imaging until his retirement in 2016. A professor of radiological sciences beloved by his colleagues and patients, Dr. Bassett was considered one of the “fathers of breast imaging” and played an important role in its gaining recognition as a subspecialty. He was internationally known for his role in the development of national guidelines to ensure high-quality mammography through the Mammography Quality Standards Act. Of all his accomplishments, he was most proud of the UCLA Breast Imaging Fellowship, which he established in 1987.

With Dr. DeBruhl’s gift, the lobby across from the Iris Cantor Breast Imaging Center in the Peter Morton Medical Building at 200 Medical Plaza will be named The Bassett Lounge in Dr. Bassett’s honor. The gift will transform the waiting area for breast imaging patients and make it a comfortable space in his honor.

Dr. DeBruhl wanted us to know that he was not only her boss and colleague, but a friend and mentor. He helped launch the careers of UCLA residents and fellows over a period of 40 years. Through his mentorship and expertise in breast imaging, these doctors are still saving women’s lives and perpetuating Dr. Bassett’s legacy.

World’s first fully robotic embolization demonstrates potential of remote procedures

The expertise needed to meet the most challenging medical emergencies and perform the most complex interventional procedures tends to cluster in population centers, and within those areas it tends to further cluster within a relatively few academic medical centers. But patients in need of care can live anywhere, especially in these times of working remotely.

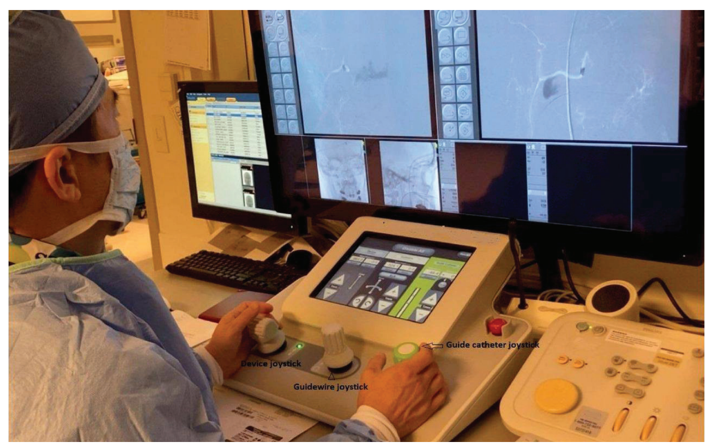
Robotic procedures offer the possibility of bridging the medical expert and the medical need, regardless of their locations. The signals that cross the procedure suite during a routine robot-assisted procedure can theoretically also cross the continent or the world.

Satoshi Tateshima, MD, professor of radiological sciences and interventional neuroradiologist, established an important proof-of-concept last year when he performed the first fully robotic embolization. He has since successfully repeated the feat four times.

In the past, such procedures were all done manually, with a interventionalist in the procedure room, or they were done in a hybrid fashion with the catheter inserted manually and robotic control used for the rest of the procedure.

“But I wanted to do everything robotically,” says Dr. Tateshima. “That was my vision and that’s what we did.”

The patient Dr. Tateshima operated on had a severe case of COVID-19 that put him at risk for blood clots. The blood thinner he was given to prevent the formation of clots caused chronic nosebleeds, which necessitated the embolization procedure.



UCLA Health photo

Interventional neuroradiologist Dr. Satoshi Tateshima performed the world’s first fully robotic embolization in 2021.

When Dr. Tateshima performed this remote procedure, the patient wasn’t thousands of miles away. He was just in the procedure room next door. But this technique could be used to span any distance.

“Eventually, for complete remote robotics, we should be able to perform everything,” says Dr. Tateshima. “The technology is there. With 5G, I think it’s possible.”

In addition to removing geographic barriers to care, fully robotic procedures can avert exposure to infectious disease and ionizing radiation for the interventionalist.

Recent Radiology Events

Graduating interventional radiology fellows (left to right): Jason Chiang, MD, PhD, Zachary Haber, MD, Megan Sue, MD, Jason Hanley, MD, Brittany Harrison, MD, David Zucker, MD, MS

Radiology Residency Retreat

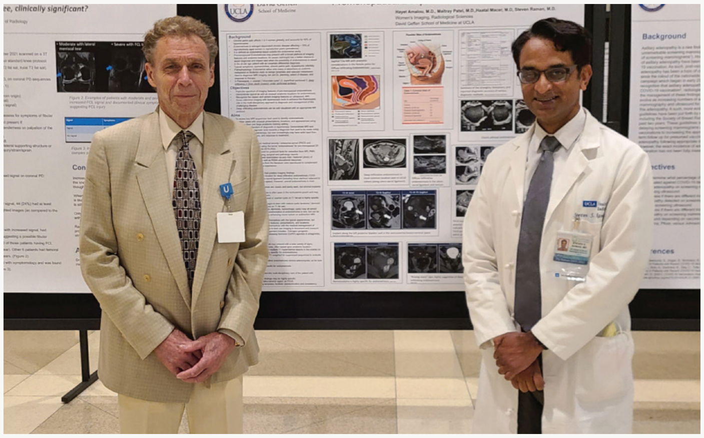
On November 5, 2021, the chief residents organized a day-long retreat for all radiology residents. The retreat took place in Manhattan Beach and was filled with team-bonding activities. The residents used this time to set goals for the academic year and learn more about one another.

Residents at the radiology resident retreat in Hermosa Beach on November 5, 2021

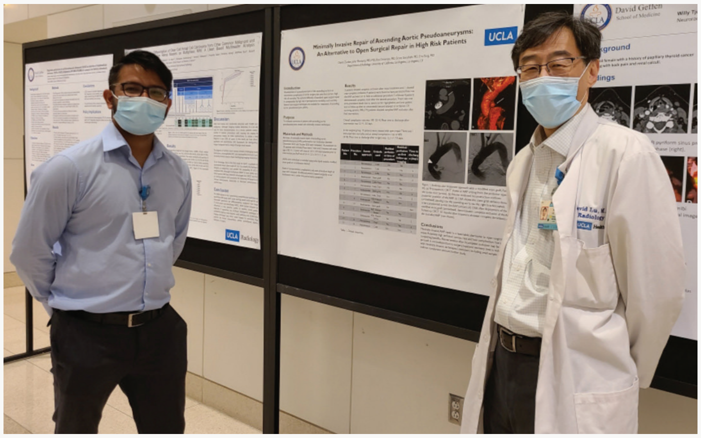
Department of Radiological Sciences end-of-year event at Skirball Center

End-of-Year Event

On June 3, 2022, The Department of Radiological Sciences hosted the annual end-of-year event at the Skirball Cultural Center. This outdoor dinner allowed the department to celebrate its many successes of the 2022 academic year as well as honor the outgoing fellows and residents.



Leo G. Rigler Chair, Dieter Enzmann, MD, with Steven S. Raman, MD, FSAR, FSIR, at Radiology Research Day at RRUMC.



Varun Badheka, MS, with David Lu, MD, at Radiology Research Day at RRUMC.

On May 26, 2022, the Department of Radiological Sciences hosted our annual Radiology Research Day at Ronald Reagan UCLA Medical Center. This event highlights the research of trainees throughout the department. This year's event showcased 27 different projects. Posters were displayed in-person and virtually. Viewers were able to vote on their favorite projects and four winners were selected. Congratulations to Jason Chiang, MD, PhD, (first place), Alex Chung, MD, (second place) and Daniel Bradley, MD, and Kenton Kagy, DO, (tied for third place).

End-of-Year Awards

Leo G. Rigler Outstanding Senior Medical Student in Radiology
Kevin Ding, MD

Outstanding Nighthawk Radiology Resident
Sipan Mathevosian, MD, MS

Outstanding Acute Care Service
David Zucker, MD

RSNA Research Award
Hayet Amalou, MD

Outstanding Service as Chief Fellow
Daniel Bradley, MD
Alex Chung, MD
Andrew Surman, MD

Outstanding Service as Chief Resident
Shimwoo Lee, MD
Sipan Mathevosian, MD, MS
Steven Reed Plimpton, MD, MS
Brian Tsui, MD

Outstanding Volunteer Faculty
Timothy Ryan, MD

Outstanding Integrated and Affiliated Faculty
Kira Chow, MD

Outstanding Young Faculty
Aarti Luhar, MD

Outstanding Associate Professor
Luke Ledbetter, MD

International Elective Award for Academic Excellence in Memory of Taylor J. Choy
Joshua Arnold, MD
Brian Tsui, MD

Bruce Barack Award for Teaching Excellence
Zachary Haber, MD

John R. Bentson Award for Clinical Excellence
Jeremy Middleton, MD

Seyed Rooholamini Outstanding Graduating Senior Resident
Steven Reed Plimpton, MD, MS

Department of Radiology Outstanding Graduating Senior Resident
Sipan Mathevosian, MD, MS

Outstanding Basic Science Faculty
Thomas Oshiro, PhD

Leo G. Rigler Outstanding Teaching Award
Fereidoun Abtin, MD

Stay in Touch!

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If you've changed your contact information recently, let us know so we can keep in touch!

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Fellows' Future Plans

Abdominal

Matthew Burr, MD
Radia (Remote)

Alex Chung, MD
UCLA (Los Angeles, CA)

Priyanka Dubé, DO
Olive View-UCLA Medical Center (Los Angeles, CA)

Haddy Jarmakani, DO
Charlotte Radiology (Charlotte, NC)

Christina Jeong, MD
Charlotte Radiology (Charlotte, NC)

Emilie Nguyen, MD
Kaiser Permanente (Woodland Hills, CA)

Richard Rothman, MD
Charlotte Radiology (Charlotte, NC)

Eva Xia, MD
St. Jude Radiology (Fullerton, CA)

Breast

Hayet Amalou, MD
Cedars-Sinai Medical Center (Beverly Hills, CA)

Daniel Bradley, MD
UCLA (Los Angeles, CA)

Kenton Kagy, DO
MRD Imaging (Orange, CA)

Olivia Linden, MD
Kaiser Permanente – South Bay (Los Angeles, CA)

Hanna Liu, MD
Kaiser (Fontana, CA)

Cardiothoracic Imaging

Amir Imanzadeh, MD
Plans Pending

Sohrab Nazertehrani, MD
Plans Pending

Diagnostic Neuroradiology

Phong Ha, MD
Radiology Specialist of Louisville (Louisville, KY)

Frank Hebroni, MD
Neuroradiology Private Practice (Remote)

Michael Jinpyo Lee, MD
PIH Health Systems (Los Angeles, CA)

Michael Jung Sobrinho Lee, MD
Radiology of Indiana (Indianapolis, IN)

Andrew Ong, MD
San Antonio Regional Medical Center (Upland, CA)

Willy Tjong, MD
Private Practice (San Francisco, CA)

Interventional Neuroradiology

Hamidreza Saber, MD
Plans Pending

Musculoskeletal Imaging

Alan Alexander, MD
Plans Pending

Andrew Surman, MD
South Coast Radiological Medical Group (Laguna Hills, CA)

Pejman Taghavi, MD
Coastal Imaging (Manahawkin, NJ)

Interventional Radiology – Independent

Jason Hanley, MD
Radiology Ltd. (Tucson, AZ)

David Zucker, MD
Ocean Radiology Associates (New London, CT)

Interventional Radiology – Integrated

Jason Chiang, MD, PhD
UCLA (Los Angeles, CA)

Zachary Haber, MD
UCLA (Los Angeles, CA)

Brittany Harrison, MD
CAIMA at California Pacific Medical Center (San Francisco, CA)

Megan Sue, MD
Torrance Memorial Medical Center (Torrance, CA)

Residents' Future Plans

Joshua Arnold, MD
Musculoskeletal Imaging Fellow – University of Wisconsin

Jonathan Barclay, MD
Musculoskeletal Imaging Fellow – University of California, Los Angeles

Zaid Haddadin, MD
Musculoskeletal Imaging Fellow – Mallinckrodt Institute of Radiology

Ashley Hu, MD
Musculoskeletal Imaging Fellow – University of California, San Diego

Adam Kinzel, MD
Abdominal Imaging Fellow – University of California, Los Angeles

Sipan Mathevosian, MD, MS
Interventional Radiology (Independent) Fellow – University of California, Los Angeles

Jeremy Middleton, MD
Musculoskeletal Imaging Fellow – University of California, Los Angeles

Steven Reed Plimpton, MD, MS
Breast/Body Imaging Fellow – University of Southern California

Brian Tsui, MD
Neuroradiology Fellow – University of California, San Francisco

Craig Wilsen, MD, PhD
Breast Imaging Fellow – Stanford University

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