PRESIDENT SHARES PERSPECTIVES ON NASS, BIOLOGICS, LEADERSHIP DURING THURSDAY ADDRESS

Understanding different perspectives has been one of the guiding principles of Jeffrey C. Wang’s NASS presidency. “I think if we all just look at different perspectives and understand them, then maybe we would be able to see each other’s points of view a little bit better. I think it would go a long way toward better collegiality,” said Dr. Wang, who recapped his year during Thursday’s Presidential Address.

Considering these different perspectives has been important for Dr. Wang, as it comes to planning the NASS Annual Meeting to best suit the needs of both the surgical and nonsurgical members and in considering how NASS can best serve its growing international constituency. “There’s a lot of things that we face at NASS as an organization, and that we do in our practices and some of the political issues that we deal with where the situation really isn’t that clear and we all have different perspectives. I think we need to understand different perspectives,” he said.

Recalling his early membership in NASS and being tapped by former NASS President Jean-Jacques Abitbol, MD, to serve as co-chair of the Annual Meeting Planning Committee with Jerome Schofferman, MD, Dr. Wang said his original perspective that NASS might be an “old boys club” was quickly dispelled. “What we both realized is that we had had an incorrect perspective on NASS. Dr. Abitbol didn’t know either of us really that well, but he had selected us because he thought we would do the best job. And that’s when I learned that NASS is not an old boys club, but that people are advanced based on merit,” he said.

Dr. Wang said he has served on the NASS Board for a long time and has benefitted from the guidance and mentorship offered by those who came before him. He said that different perspectives were considered in planning the content for this year’s meeting with a mission to redesign the meeting this year.

HITTING THE RIGHT NOTE’ TAKES TEAMWORK, SAYS PRESIDENTIAL GUEST SPEAKER

IF YOU’VE EVER ATTENDED AN orchestra concert, you might think that the conductor is in complete control and deserves all the credit for a great performance, and all the blame for a bad one. Not so, according to this year’s Presidential Guest Speaker, renowned conductor and musician Christian Gansch, who addressed NASS attendees on Thursday morning. A conductor is only part of a successful musical equation, he said, just as a successful surgery depends not only on the surgeon, but on an entire team of professionals working together.

“Many people think an orchestra is a simple structure with 100 musicians who simply look at the conductor and do what he or she wants, but after 40 years of doing this, I can tell you that this never happens,” Gansch said. “People think there is one big and important maestro and he or she does everything, but the structure of a professional orchestra has 15 departments, and each department has three leaders and three assistants, who all must come together to create a symphony.”

And those are just the people the audience sees, he said, noting that the Vienna Symphony Orchestra has 144 musicians and 60 singers, but a total of 950 employees, including the stage and production crew, human resources department, marketing people and other administrative personnel. “An orchestra runs more like a company than most people would think. What goes on backstage and behind the scenes is incredibly complex,” Gansch said. “To achieve a first-class performance, we must have a perfect interplay of competencies, in much the same way that the practice of medicine requires.”
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RESEARCH PROVIDES INSIGHT ON ASD COMPLICATIONS, BUT FURTHER SOLUTIONS ARE NEEDED

It's not breaking news that complication rates after adult spinal deformity (ASD) surgery are among the highest of the surgical subspecialties, compounded by poorer outcomes and increased health care costs.

Speakers during Thursday’s Surgical Symposium, “Anticipating and Reducing Complications in Adult Spinal Deformity Surgery: Clinical Translatable Research,” addressed the evidence-based findings in a variety of studies related to reducing and mitigating those complications.

“Reported complication rates after ASD surgery range from 10 to 96 percent. And each time I see this cited in a paper, I chuckle a little bit because that is completely unhelpful to the surgeon, the patient, institutions and insurance. It means nothing,” said Alan H. Daniels, MD, University of Washington.

Dr. Daniels noted that complication rates, just like our techniques, are evolving and should be carefully monitored, reported and studied.

Munish C. Gupta, MD, reviewed the latest research related to rod breakage and nonunion in pedicle subtraction osteotomy, and noted that rod number and configuration play an important role in reducing complications.

“Multiple rods can significantly reduce the early rod failure,” said Dr. Gupta, Mildred B. Simon Distinguished Professor of Orthopedics at Washington University. “The different constructs demonstrate different survival rates. And so far, we find that multiple rods are much better, but multiple rods can also fail the longer follow up. So, it’s very important to remember that you have to achieve a fusion no matter what. Otherwise everything can fail.”

For PJK, a problematic, yet fairly common complication that arises in about 22 to 40 percent of ASD surgeries, the research shows that the surgeon needs to “be a thinker,” said Shay Bess, MD.

“You can’t just go into the surgery, slap in a hook or layer in a tether and think it’s going to work,” said Dr. Bess, Director of Surgical Quality and Resource Utilization for the NASS.

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FRIDAY Innovation Lab & Solution Showcase Presentations

8–10 AM
Surgical Innovation Lab Demo: Autologous Biologics: The Role of Bone Marrow Concentrate in Tissue Healing
The Learning Place - Orange Lab
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11 AM–1 PM
Surgical Innovation Lab Demo: The Learning Place – Orange Lab
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Surgical Innovation Lab Demo: The Learning Place – Orange Lab
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12–1 PM
Solution Showcase: Lawsuit Prevention, Asset Protection, Medical License Protection & Tax Reduction
The Learning Place - Red Theater
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POLITICAL OPERATIVE DAVID AXELROD SPEAKING AT TODAY’S HEALTH CARE SYMPOSIUM

Recent polling indicates that health care remains one of the top issues that voters will consider when casting their ballots in the upcoming 2020 presidential and congressional elections. The results of these elections could have a lasting impact on the future of the U.S. health care system and whether Democrats and Republicans are able to reach consensus on legislation intended to stabilize the health insurance markets, provide further access to care and improve quality while lowering costs.

Today’s Integrated Symposium, “A Look at Medicare for all Prospects, the Legacy of the ACA and the Path Forward for American Health Care,” will take an in-depth look at current Medicare for all proposals and examine their relevance to spine care providers’ ability to deliver high quality care to patients. The symposium will be held from 10:30 am–12 pm in room W471ab.

The symposium will also feature special guest speaker, David Axelrod, Senior Political Commentator for CNN, Host of The Axe Files and Director of the University of Chicago Institute of Politics. A respected journalist, political strategist and award-winning ad maker, David Axelrod is perhaps best known as the architect of President Barack Obama’s improbable four-year march from the Illinois State Senate to the White House. As senior advisor to the President, Mr. Axelrod was a key figure in shaping and selling the administration’s agenda and legislative priorities, including passage of the Affordable Care Act (ACA).

In his address, “Witness to History: Leadership Lessons from a Presidential Advisor,” Axelrod will share the leadership lessons he learned working in the West Wing and analyze the major issues of the day.

With the 2020 Presidential election looming, Axelrod believes health care will play a major role for candidates. While other issues have taken front stage in the never-ending news cycle, the veteran political operative says health care will continue to be vital to many.

“It’s not being forgotten by those who are paying the bills. And it’s not being forgotten by those who don’t have insurance,” Axelrod said of health care. “I think it is primary for some. Obviously, Trump casts a large shadow over the election. Part of that shadow includes his continuing effort to demolish the ACA and a promise, so far unfulfilled, to find a viable substitute for it. It may not be the defining issue of every day of the campaign, but it’s the issue that cost the Republicans control of the United States Congress [in 2018] and I expect that it’s going to be important in 2020.”
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GAUTHIER BIOMEDICAL
Thursday afternoon symposium reviewed the growing research body on various forms of regenerative medicine for the treatment of back pain and disease.

“One of the unfortunate problems is the legitimacy of a lot of the research that we all do has been obscured and eclipsed by a lot of the illegitimate work that’s been going on,” said Corey W. Hunter, MD, who moderated the session and also wrapped up the talks with a look at regenerative medicine as a possible standard of care for the spine.

Presenting research on the neuraxial uses for platelet rich plasma (PRP), Aaron Calodney, MD, noted that replacing corticosteroids, which can have significant side effects and adverse reactions especially with long-term use, is one of the holy grails of musculoskeletal medicine.

Because it’s derived from peripheral whole blood, PRP does not contain stem cells, said Dr. Calodney. It does, he said, contain platelets and proteins and cytokines that are either developed in the plasma or are released from the platelets as they become activated.

“Regenerative medicine might offer us a safe, autologous source of highly anti-inflammatory factors that provide a collaboratory modulation and possibly anabolic remodeling of injured tissue whether it be platelet rich plasma, autologous serum or platelet lysates. They are all sources of cytokines and cellular proteins,” said Dr. Calodney, who is an anesthesiologist at Baylor Scott & White Texas Spine and Joint Hospital.

He added that they are as safe as an epidural blood patch, which spine specialists have been using for 50 years, and can be delivered like other spinal injections.

Michael DePalma, MD, an interventional spine specialist with Virginia iSpine Physicians, discussed allogeneic grafts for discogenic pain, particularly annular fissures in the intervertebral disc.

“We don’t currently have a successful treatment or repair regeneration of painful lumbar disc, but we have a better understanding of why this is painful,” said Dr. DePalma. “I think we might need to keep in mind that a successful regenerative technology might best include a variety of strategies. A single standalone strategy may not be the ideal option, but we have more to learn on that front.”

Douglas P. Beall, MD, Chief of Radiology Services, Clinical Radiology of Oklahoma, offered a look at the research on intradiscal mesenchymal stem cells for degenerative disc disease, including results from phase two of the Mesoblast trial. Results from phase two showed the allogenic mesenchymal stem cells were well tolerated and that there were improvements in pain over the placebo group.
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CONTRAINdications

• Do not use SURGFLO® in intravascular compartments because of the risk of embolization.
• Do not use SURGFLO® in patients with known allergies to porcine gelatin.
• Do not use SURGFLO® in close proximity of skin incisions as it may interfere with the healing of skin edges. This interference is due to mechanical interposition of gelatin and is not secondary to intrinsic interference with wound healing.

WARNINGS

• SURGFLO® should not be used in the presence of infection and should be used with caution in contaminated areas of the body. SURGFLO® should not be used in instances of purpura hemorrhagica. SURGFLO® will not act as a tampon or plug in a bleeding site.
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• Excess SURGFLO® should be removed once hemostasis has been achieved.
• The safety and effectiveness of SURGFLO® for use in ophthalmic procedures has not been established.
• SURGFLO® should not be used for controlling postpartum intrauterine bleeding or menorrhagia.

SURGFLO® Hemostatic Matrix Kit Essential Product Information (Made from Absorbable Gelatin Sponge, USP) with Thrombin (cont’d)

WARNINGS (cont’d)

• The safety and effectiveness of SURGFLO® has not been established in children and pregnant women.
• The blue flexible applicator tip should not be trimmed to avoid exposing internal guidewire.
• The white straight applicator tip should be trimmed away from the surgical area. Cut a secure angle to avoid creating a sharp tip.

PRECAUTIONS

• Safe and effective use of SURGFLO® Sponge has been reported in a published neurologic prospective study involving 700 cases in Europe. Safe and effective use in neurosurgery has not been proven through randomized, controlled clinical studies in the United States.
• SURGFLO® is supplied as a sterile product and cannot be resterilized.
• SURGFLO® should not be used for packing unless excess product that is not needed to maintain hemostasis is removed. SURGFLO® may swell up to 20% upon contact with additional fluid.
• SURGFLO® should not be used in conjunction with autologous blood salvage circuits.
• SURGFLO® should not be used in conjunction with methylmethacrylate adhesives.
• In urological procedures, SURGFLO® should not be left in the renal pelvis or ureters to eliminate the potential for calculus formation.

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• Compression of the brain and spinal cord resulting from the accumulation of sterile fluid have been observed.
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• The use of absorbable gelatin-based hemostatic agents during the repair of dural defects associated with laminectomy and craniotomy operations, has been associated with fever, infection, leg paresthesias, neck and back pain, bladder and bowel incontinence, cauda equina syndrome, neurogenic bladder, impotence, and paresthesias.
• The use of absorbable gelatin-based hemostatic agents has been associated with paralysis, due to device migration into foramina in the bone around the spinal cord, and blindness, due to device migration in the orbit of the eye, during laminationectomy, laminectomy, and repair of a frontal skull fracture and lacerated lobe.
• Foreign body reactions, "encapsulation" of fluid, and hematoma have been observed at implant sites.
• Excessive fibrosis and prolonged fixation of a tension have been reported when absorbable gelatin-based sponges were used in severed tendon repair.
• Toxic shock syndrome was reported in association with the use of absorbable gelatin-based hemostats in nasal surgery.
• Fever, failure of absorption, and hearing loss have been observed when absorbable hemostatic agents were used during tympanoplasty.

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For complete indications, contraindications, warnings, precautions, and adverse reactions, please reference full package insert.
FRIDAY DAILY NEWS

NASS 2019'S HIGHEST RATED ABSTRACTS

The NASS 2019 Scientific Program Committee received more than 1,400 abstract and session proposal submissions. The 21 highest-rated abstracts earned the coveted “Best Paper” designation and are being presented in morning sessions this week. Following are the Best Papers to be presented today.

BEST PAPERS: FRIDAY
9-10 AM • Room W471ab

● Outcomes of Decompression without Fusion in Patients with Lumbar Spinal Stenosis with Back Pain
  Presenting author: Leah Carreon, MD, MSc

In this study, researchers sought to determine if simple discectomy without fusion would improve the back pain in patients with lumbar disc herniation and substantial back pain. Their results suggest that simple discectomy leads to improved outcomes and that fusion is not necessary to treat the back pain associated with lumbar disc herniation in these patients. Based on their results, the researchers believe that patients with lumbar disc herniation can be counseled that discectomy alone can lead to improved outcomes. Moving forward, the researchers are interested in long-term follow-up to identify patients who did not improve and required fusion, and identifying risk factors that led to the need for fusion.

● Ambulatory Status after Surgical and Nonsurgical Treatment for Spinal Metastasis
  Presenting author: Andrew Schoenfeld, MD, MSc

In this study, researchers evaluated the effects of operative and nonoperative management on maintenance of ambulatory function and survival for patients treated for spinal metastases who were independent ambulators at the time they presented for treatment. Propensity matching was used to yield an analytic sample in which operatively and nonoperatively treated patients were similar with respect to key baseline clinical features. The researchers found that patients treated operatively were less likely to lose ambulatory function six months after presentation than those managed nonoperatively. For patients with spinal metastases, the researchers believe their data can be incorporated into discussions about the treatments that align best with patients’ preferences regarding surgical risk, mortality and ambulatory status.

● Impact of Previous Lumbar Spine Surgery on Outcome of Lumbar Total Disc Replacement: Analysis of Prospective 5-Year Follow-Up Study Data
  Presenting author: Richard Guyer, MD

The purpose of this study was to compare lumbar total disc replacement (TLDR) outcomes in patients with prior lumbar spine surgery (PLS) to outcomes in those with no prior lumbar surgery (NPLS). The study was a post hoc analysis of data collected prospectively as part of an FDA-regulated trial with 5-year follow-up. Based on their findings, the researchers conclude that prior lumbar spine surgery was not related to compromised outcomes among patients undergoing TLDR. There were no statistically significant differences in OD1, SF-36, pain scores, or safety rates between PLS and NPLS patients. These results are in line with findings from earlier studies that prior surgery is not a contraindication for TLDR provided that other selection criteria are met.

● Randomized, Prospective Clinical Trial to Evaluate Efficacy and Safety in Lumbar Fusion Surgery of Implantation of Autologous Bone Marrow Mesenchymal Cells Expanded Ex Vivo and Combined with Allogeneic Bone Tissue, Compared with Autologous Iliac Crest Graft, Part I: Radiological Findings
  Presenting author: Pilar González-Tartiere, MSc

This study is designed to assess if XCEL-MT-Oстео-alpha (scaffold of heterologous human cancellous bone tissue seeded with autologous bone marrow mesenchymal cells expanded “ex vivo”) is a safe product and whether the lumbar fusion achieved is equal to or better than autologous iliac crest graft. The researchers report that radiological fusion rates in the area in which the product was applied were significantly higher than those obtained with autologous iliac crest graft at all X-ray controls and CT at six months. Fusion at one-year follow-up CT was equal or better, without being statistically significant. The findings suggest that XCEL-MT-OSTEо-ALPHA is a safe and feasible product (no serious adverse reactions were associated) not only in lumbar spinal surgery, but also in hip osteonecrosis and pseudarthrosis.

● Evaluation of Health Related Quality of Life Improvement in Patients Undergoing Spine vs Adult Reconstructive Surgery
  Presenting author: Aaron Buckland, MD

In this study, investigators sought to compare baseline and postoperative Patient Reported Outcome Information System (PROMIS) scores for patients undergoing common single-level spinal surgery procedures, total hip arthroplasty (THA) and total knee arthroplasty (TKA). They found that patients undergoing single-level spinal surgery had lower initial and 6-month postoperative PROMIS scores compared to those undergoing total hip and knee arthroplasty. All procedure cohorts demonstrated meaningful improvement after orthopedic surgical treatment, but spinal surgery patients demonstrated more improvement in physical function and pain interference scores compared to arthroplasty patients. Future study is required to assess the value base of spinal and adult reconstruction surgery, including durability.

● Are Current DRG-Based Bundled Payment Models for Lumbar Fusions Risk-Adjusting Adequately? An Analysis of Medicare Beneficiaries
  Presenting author: Azeem Malik, MBBS

Current bundled payment models of care, such as the CMS Bundled Payment for Care Improvement (BPCI), rely on the use of Diagnosis-Related Groups (DRG) to trigger episodes of care and define payments. This study evaluates whether the use of DRGs to identify payments in bundled models of care is justified. Under the proposed DRG-based bundled payment model, providers would be reimbursed the same amount for lumbar fusions regardless of the surgical approach, the extent of fusion, use of adjunct procedures and cause/indication of surgery, despite each of these factors having different resource utilization and associated costs. The researchers believe their analysis highlights discrepancies in the current bundled payment system that may impede access to care for sick/complex patients.

● Intravenous and Oral Tranexamic Acid are Equivalent at Reducing Blood Loss in Thoracolumbar Spinal Fusion: A Prospective Randomized Trial, Phase 2
  Presenting author: Mohsin S. Fidai, MD

The objective of this prospective randomized study was to compare the efficacy of intravenous (IV) and oral routes of tranexamic acid (TXA) on perioperative blood loss and allogeneic blood transfusion rates in adult patients undergoing posterior thoracolumbar instrumented fusion surgery. The researchers found no difference in the efficacy between the two routes of administration in both the primary outcome of hemoglobin drop and secondary outcomes. They report that oral TXA appears to be as safe as IV TXA in regard to postoperative thromboembolic events and infections. Given the equivalent clinical outcomes, potential cost savings and the ease of drug administration, the researchers believe that oral TXA is a superior alternative to intravenous TXA.
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CONTINUED FROM PAGE 3

ASD COMPLICATIONS

spine services at Presbyterian/St. Luke’s Medical Center in Denver. “You have to focus on alignment. You have to plan out your surgeries. You have to do the right thing for your patients and use some kind of guides to then guide that alignment.”

Dr. Bess also indicated that another problem with combating the relatively high PJK complication rate is the need for a better definition of PJK or failure. The current definition, he noted, is mainly radiographic, which provides a spectrum from benign kyphosis to junctional failure.

“The first thing we probably learned in the first 10 years now is we need a better definition of this because for us to discover, define and resolve this problem, we first need to actually define it, define it accurately and then use it consistently,” he said.

Additionally, he argued multiple confounding factors contribute, such as age and fusion of the pelvis.

Douglas C. Burton, MD, shared the work being done by his department at the University of Kansas Medical Center to standardize preoperative approaches to reduce complications in ASD surgery. Dr. Burton, Professor of Orthopedic Surgery, and his colleagues set out to conduct a systematic review of 12 items — nine patient factors and three operative factors — to see if they could reduce or show an association between these factors and complications, reoperations and readmissions to create a standard protocol that would be used to evaluate every patient.

“There was good evidence to support standardizing the preoperative surgical treatment of ASD,” he said. “As medicine moves to a health system oriented approach, if we’re not leading this, someone’s going to be telling us what to do. And I don’t think any of us want that.”

Eric O. Klineberg, MD, Associate Professor, Department of Orthopedic Surgery, University of California Davis School of Medicine, wrapped up the symposium with a look at how the department at the University of Kansas Medical Center to contribute, such as age and fusion of the pelvis.

“Some of these controversies are in my mind now because as we go forward with these novel treatments, such as stem cells or the next thing around the corner, I think we just have to be mindful that our patients are very sensitive about this. Our patients are so afraid of surgery, they’re looking for some type of alternative,” he said.

He also shared his perspectives on leadership, basing his thoughts on the Jim Collins book Good to Great about the five levels of leadership and the selfless nature of “level five” leaders.

“My advice to the young people: if you’re in a committee at NASS and you want to move up or you’re in your hospital, always think at level five and about the good of the organization, the good of your spine center, or the good of your university — it’s about being selfless and this is what we should all do. That carries a lot of weight,” he said.

Finally, Dr. Wang acknowledged and thanked the many people who helped make his year successful, including NASS members, committees and volunteers, executive committee, past presidents, program chairs, mentors, NASS staff and his family.

NASS 2019 MCCORMICK PLACE SHUTTLE

NASS offers free shuttle bus service between McCormick Place and our official meeting hotels, with the exception of those within walking distance. Check the NASS 2019 Final Program or annual meeting app for the shuttle schedule and routes.

SHUTTLE SCHEDULE

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Improving clinical, surgical and therapeutic patient care

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Growing body of clinical evidence

MIS-TLIF study demonstrated 96% fusion at 12 months*

96% 96.5%

75 Patients 95 Levels


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QUESTIONS OF THE DAY

WHAT’S SOMETHING YOU’VE LEARNED AT NASS 2019 THAT YOU’LL TAKE BACK TO YOUR PRACTICE?

I’m a researcher and there have been some great talks on the use of large datasets and predictive analysis. Over the last few years, there has been a shift toward incorporating data-driven solutions in clinical practice.

Virginia Lafage, PhD
New York, NY

I’m new member and this is my first time attending the NASS Annual Meeting and I’ve picked up a lot of information that I will take back to Italy with me. I’m interested in spinal deformity and have attended a couple of great sessions with great speakers on this topic.

Salvatore Minnella, MD
Milan, Italy

There’s so much to learn here, it’s hard to pick out one thing, but I’ve learned a lot from presentations of new papers that are coming out on spine deformity and about how much to correct, which has always been a challenging question. I’m a deformity person, so I’ve learned a lot from presentations of new papers that are coming out and how much to correct, that has always been the question.

Nitin Kukkar, MD
San Antonio, TX

WHAT ARE YOU LOOKING FORWARD TO SEEING AT NASS 2020 IN SAN DIEGO?

I think this year’s meeting has really been fantastic, with a wide variety of topics really well balanced between operative and nonoperative. The addition of the cadaver demonstrations this year is really interesting and I would love to see more of that at next year’s meeting.

Robert Viere, MD
Addison, TX

One of the things that is really a hot topic is advances in regenerative medicine and how that works together with surgery, so that you combine operative and nonoperative treatments. That’s exciting for both surgeons and for patients to hear about and I think it’s an area that will be growing and of interest to a lot of people.

Rita Roy, MD
Reston, VA

I’ll be interested in more information and analysis regarding the use of biologics, which is a growing and pretty controversial area right now.

Andrew Cordover, MD, MS
Birmingham, AL

CAREER EVENTS DURING NASS 2019!

Take advantage of all the career-related events held in conjunction with NASS 2019! Participate in the Practice and Employer Meet & Greet, get a professional headshot taken, or attend one of the networking social events. Stop by the Career Center booth in the West Lobby to view the full schedule of events.

SEE YOU NEXT YEAR IN SAN DIEGO!

NASS 2020 • 35TH ANNUAL MEETING • OCTOBER 7–10, 2020

NASS 2019 DAILY NEWS
Dispelling the myths about Full-endoscopic Spine Surgery

Myth #3:
Endoscopic systems can’t provide the image quality required for spine surgery.

Reality: Modern endoscopes and video systems provide clarity only dreamed of years ago. New glass rod endoscopes provide brilliant and highly detailed images, while true 4K video systems provide the exceptional definition needed to see the finest anatomic details.

Visit us at booth #3824 to experience the stunning ENDOCAM® Logic 4K video system.

RIWospine Educational Calendar

Friday, September 27th
Lectures at the RIWospine booth #3824:

- 10:00 - 10:30 am  
  Lecture: Full-endoscopic Surgery of the Cervical Spine  
  Dr. Chi Heon Kim

Pioneering spine endoscopy

To learn more visit RIWospine at booth #3824

www.riwospine.com/us
T2 Stratosphere Expandable Corpectomy System

INDICATIONS
Cervical (C2-C7) - 13mm Centerpieces Only
To be used in skeletally mature patients to replace a collapsed, damaged, or unstable vertebral body due to tumor, trauma (i.e., fracture, disorientation, or vertebral body fracture due to tumour or trauma), or for reconstruction in cervical degenerative disorders, or for patients with advanced stage tumors in whom life expectancy is of insufficient duration to permit achievement of fusion. The device is intended to be used with supplemental fixation and must include posterior fixation at more than two levels. The System is intended for use with autograft or allogenic bone graft comprised of cancellous and/or corticocancellous bone graft as an adjunct to fusion.

Thoracolumbar (T1-L5) - All Implants
To be used in skeletally mature patients to replace a collapsed, damaged, or unstable vertebral body due to tumor or trauma (i.e., fracture) or for patients with advanced stage tumor in whom life expectancy is of insufficient duration to permit achievement of fusion. The device is intended to be used with supplemental fixation. The System is intended for use with autograft or allograft as an adjunct to fusion.

RISKS
A successful result is not always achieved in every surgical case. Potential risks associated with the device include, but are not limited to:
- Nerve damage, implant migration, or vertebral body fracture
- Tissue damage, nerve damage, or loss of neurological function
- Implant loosening, breakage, fracture, or debris
- Postsurgical change in spinal curvature, loss of correction, height, and/or reduction
- Site complications including pain, infection, or wound healing problems.

Grafton DBM DBF

INDICATIONS
Grafton DBM DBF can be used in orthopedic or reconstructive bone grafting procedures. The product can also be used in bone grafting procedures in combination with autologous bone or other forms of allograft bone, or alone as a bone graft.

RISKS
The presence of infection at the transplantation site is a contraindication for the use of this allograft. This allograft may contain trace amounts of antibiotics (gentamicin), surfactant, and other processing solutions. Caution should be exerted if the patient is allergic to these antibiotics or chemicals.

1. Compared to T2 Altitude Device
2. Grafton DBM DBF + T2 Stratosphere Expandable Corpectomy System is cleared for use in the Thoracolumbar Spine only.
3. Compared to T2 Altitude "Device"

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Stop by the Medtronic booth to learn more.

Courtesy of Dr. Faiz Ahmad, Emory University, Atlanta, GA, USA