PURPOSE: We present a novel interbody fusion classification system that addresses inadequacies if traditional grading schemes in order to accommodate the integration capability of bioactive intervertebral cages.

STUDY DESIGN/SETTING: Classification System Reliability Survey.

PATIENT SAMPLE: A total of 37 surgeon respondents.

OUTCOME MEASURES: Intraclass correlation coefficients for inter- and intra-rater reliability assessments.

METHODS: A novel grading system for intervertebral fusion was developed by the authors (Figure) and included fusion consolidation through and/or around the intervertebral device, as well as the apposition of bone to the surface of the implants (ingrowth/ongrowth). Ten patient cases with 1-year CT scans were selected for the survey, including coronal and sagittal reconstruction views which were provided to the respondents. Surveys were administered twice >2weeks apart and with cases in different orders. Intraclass Correlation Coefficient (ICC) was used to calculate inter- and intrarater reliability.

RESULTS: A total of 51 spine surgeons participated, with 37 of them completing surveys on two separate occasions. For the entire cohort, ICC inter-rater reliability (95% CI) average was 0.618 (0.435-0.834; p<0.001), while the intra-rater reliability average was 0.778 (SD=0.211). Four respondents had outlier intra-rater reliability scores averaged 0.259. When removing those 4 respondents (10.8% of the respondents), and analyzing the more consistent 90% of the respondents, ICC inter-rater reliability average was 0.628 (0.445-0.841; p<0.001), and intra-rater reliability average was 0.831 (SD=0.125).

CONCLUSIONS: Our novel CT-based interbody fusion classification system demonstrated substantial inter-rater reliability, and excellent intra-rater reliability when applied to a spectrum of real cases. Future assessment of interbody fusions should consider utilization of this new system in order to address the important contribution of appositional ongrowth/ ingrowth, along with traditional bone healing through and around devices.

FDA DEVICE/DRUG STATUS: This abstract does not discuss or include any applicable devices or drugs.

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P39. Telehealth and spine care: Surgeon experiences and perceptions
Grant Riew, BA 1, Francis C. Lovecchio, MD 2, Dino Samartzis, ScD, PhD, MSc 3, Philip Louie, MD 4, Michael H. McCarthey, MD, MPH 5, Melvin C. Mahoni, MD, MBA 6, Sravisht Iyer, MD 2, 1 Harvard Medical School, Boston, MA, US; 2 Hospital for Special Surgery, New York, NY, US; 3 Queen Mary Hospital, Hong Kong, Hong Kong; 4 Seattle, WA, US; 5 Indiana Spine Group, Carmel, IN, US; 6 Brigham and Women’s Hospital, Boston, MA, US

BACKGROUND CONTEXT: Telehealth use in spine surgery has become widespread due to the COVID-19 pandemic. The degree of global adoption remains unknown. To our knowledge, this is the first global survey to directly evaluate provider perspectives surrounding telemedicine use-cases.

PURPOSE: To elicit the extent of adoption of international spine telehealth. We aimed to explore telemedicine platform used, ease of use, and acceptable use-cases.

STUDY DESIGN/SETTING: Cross-sectional email survey, international.

PATIENT SAMPLE: Spine Surgeons.

OUTCOME MEASURES: Perspectives and practices of spine telemedicine.

METHODS: An anonymous, cross-sectional email survey was sent to the members of AO Spine. Survey questions covered provider experiences with and perceptions of telemedicine. Descriptive statistics were used to depict responses and responses were compared amongst regions.

RESULTS: A total of 485 spine providers responded to the survey. As of May 2020, telemedicine usage comprised >39.0% of all visits — up from <10.0% of visits pre-pandemic. A majority of providers (60.5%) performed at least 1 telemedicine visit. The format of “telemedicine” varied widely by region: African (45.2%) and European (50.0%) providers were more likely to use phone calls (no video), whereas North (66.7%) and South American (77.9%) surgeons more commonly used audio-visual telemedicine (p<0.001). North American providers used telemedicine the most during COVID-19 (>60.0% of all visits). There were 81.9% of all providers who “agreed/strongly agreed” telemedicine was easy to use. Respondents tended to “agree” that imaging review, the initial appointment, and postoperative care could be performed using telemedicine. Almost all (95.4%) surgeons preferred at least one in-person visit prior to the day of surgery.

CONCLUSIONS: Our study noted significant geographical differences in the rate of telemedicine usage and the platform of telemedicine utilized. Spine surgeons found telemedicine feasible for imaging review, initial visits, and follow-up visits although the vast majority still preferred at least one in-person preoperative visit.

FDA DEVICE/DRUG STATUS: This abstract does not discuss or include any applicable devices or drugs.

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P40. Indirect effect on adjacent segment after minimally invasive transforaminal lumbar interbody fusion
Worawat Liumthongkul, MD 1, Piti Suranaowarat, MD 2; 1 Department of Orthopaedics, Chulalongkorn University, Bangkok, Thailand; 2 Department of Orthopedics, King Chulalongkorn Memorial Hospital, Lumphini, Thailand

BACKGROUND CONTEXT: MIS-TLIF is an alternative treatment for degenerative spine disease, which aims to decompress and stabilize the most stenotic level correlating with clinical symptoms, while sparing the less severe adjacent segments. According to previous studies, interbody fusion was reported to not only affect the fused level, but also the adjacent segments. These effects might cause changes in canal dimensions at the adjacent segments, leading to unsatisfactory postoperative symptoms.

PURPOSE: The goal of this study was to compare the dural sac area and other canal dimension parameters on MRI at the adjacent segments before and after minimally invasive transforaminal lumbar interbody fusion (MIS-TLIF), including the change in segmental and regional parameters measured on plain radiograph.

STUDY DESIGN/SETTING: Retrospective cohort study King Chulalongkorn Memorial Hospital.

PATIENT SAMPLE: Patients who underwent MIS-TLIF at L4/5 level in King Chulalongkorn Memorial Hospital. The indications for surgery were spinal canal stenosis, herniated nucleus pulposus, and spondylolisthesis grade 1-2.

OUTCOME MEASURES: MR image parameters: dural sac area (DSA), sagittal spinal AP diameter (SAPD), ligamentum flavum area (LFA), ligamentum flavum thickness (LFT), foraminal area (FA), foraminal height (FH), at the adjacent segments of fused level. Standing lateral plain radiograph: disc height (DH), segmental angle (SA) of adjacent segments and fused level lumbar lordosis (LL)

METHODS: Forty-four patients who underwent MIS-TLIF at L4/5 level were examined. The indications for surgery were spinal canal stenosis, herniated nucleus pulposus, and spondylolisthesis grade 1-2. We reviewed their standing plain radiograph and MR image parameters, including dural sac area (DSA), sagittal spinal AP diameter (SAPD), ligamentum flavum area (LFA), ligamentum flavum thickness (LFT), foraminal area (FA), foraminal height (FH), disc height (DH), segmental angle (SA), and lumbar lordosis (LL) at the adjacent segments of fused level. Disc height and segmental angle at fused level was also reviewed. All parameters were compared before and, 3 months postoperatively.

RESULTS: The mean (SD) pre- and postoperative DSA at upper adjacent segment was 125.12 (35.72) and 133.17 (35.07) mm2, while pre- and