found to have a significantly higher Frankel score at follow-up though the remaining groups (B and C), presented no significant difference between their average scores. The number of patients who improved their preoperative neurological condition showed no significant difference between the subgroups; indeed, all subgroups benefited from surgical treatment with significant improvements in functional status and quality of life. Three recurrences were recorded, all in group A. Axial topography, level of the lesions and preoperative symptoms, including impairment of the sphincter functions proved no statistical interaction.

Conclusions: Elderly might not be a contraindication for surgery treatment in SMs, due to important improvements in functional status and quality of life in this subgroup of the population. Older patients can benefit from prompt assessment and early surgery in case of acute onset, with a complication rate not higher than in younger patients.

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Current state of spinal robotics – an AO Spine Survey

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Oral e-Poster Presentations - Booth 3: Spine 7 (Tumors), October 15, 2024, 12:40 PM - 2:10 PM

Background: Robotics in spine surgery has gained popularity in recent years since the indications and implementation tremendously expanded from pedicle screw instrumentation to surgical resection of the spinal column, augmentative procedures, and complex deformity and revision cases. We designed a survey to provide a landscape assessment regarding the adoption of robotics in spine surgery and to create educational awareness for this topic through the AO Spine regions.

Methods: AO spine members were invited to fill out a 27-question online questionnaire regarding the utilization of navigation and spinal robotics in practice between October 25th and November 13th, 2023. The survey was created using the SurveyMonkey platform (https://www.surveymonkey.com; SurveyMonkey Inc., San Mateo, CA, USA) and distributed by the AO Spine email platform and further promoted via social networks. All statistical analyses (descriptive statistics, Pearson Chi-Square tests) and generation of all graphs were performed using SPSS Version 29.0.1.0 (IBM SPSS Statistic).

Results: We received 424 responses from AO Spine members (response rate = 9.9 %). The participants were on average 43 10 years old and the majority stated to be board-certified orthopedic surgeons (46 %, n=195) or board-certified neurosurgeons (32%, n=136). Respondents from all continents and primarily university hospitals (49.5 %, n=210) or private hospitals/practices (28.5%, n=121) with most frequently an average rate of annual instrumentation procedures (48%, n=31-120 instrumentations/year) took part. While 42% of all participants (n=177) stated to place pedicle screws with navigation assistance, only 16 % (n=68) indicated the use of robotic assistance. Only 21 % (n=89) of all participants stated they had used a robot during a real patient procedure for spinal instrumentation in their departments with a significant difference based on the geographic origin of the respondents as most of the robotic users came from Europe, Asia & Arab countries, or North America (p=0.006). Further assessment revealed that only 11 % (n=47) of all surgeons use a spinal robot frequently (1-2x/week) while 5% (n=23) possess one but don't use it at all. Although 35 % (n=150) plan to acquire a robotic system in the future, a similar number of participants (36 %, n=153) stated they don't want/need one from a current perspective. On the question of why they have not implemented a spinal robot in their department yet, most participants (77%, n=301) stated that high acquisition costs are a major issue while further most common reasons were insufficient benefit of spinal robots (28%, n=109) and high enough precision of spinal navigation systems (20%, n=79). Although most robotic users believe that robots increase precision during instrumentation procedures (69%, n=55) and that they are useful tools (72%, n=57), they could not indicate a clear benefit regarding the reduction of intraoperative complications (54%, n=43) and increase in surgical efficiency (43%, n=34). Most respondents believe robotics might make an impact on the outcome in minimally invasive surgery (67%, n=264), adult (62%, n=244), or pediatric (50 %, n=196) deformities. Future innovations, which most respondents (70%, n=271) wished for were primarily more integrated surgical options and the integration of artificial intelligence (55%, n=211). Most surgeons (43 %, n=166) stated they would consider a shared company investment with guaranteed use of implants or other products by the hospital as an investment option to acquire a robotic system.

Conclusions: Although the hype for robotics recently increased, it still appears that robotic systems are not standard equipment for spine surgeons due to high acquisition costs and limited usability. Further developments appear to be mandatory to justify a broader utilization.

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Exploring the Gut Microbiome and Mycobiome in Glioblastoma Patients

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Oral e-Poster Presentations - Booth 2: Neuro-Oncology 1 (GBM & malignant gliomas), Neuro-Oncology 2 (GBM & malignant gliomas), October 15, 2024, 12:40 PM - 2:10 PM

Background: Glioblastoma (GBM), the predominant malignant brain tumor in adults, continues to pose significant clinical challenges, with a persistently poor prognosis despite aggressive therapeutic approaches. This study aims to unravel potential distinctions in the gut microbiome and mycobiome compositions between primary GBM patients and healthy control subjects.

Methods: In a prospective case-control study, we enrolled 23 GBM patients and 23 control participants. Rectal swabs were collected from GBM patients prior to surgery, and DNA extracted from these samples underwent 16S and ITS sequencing. Additionally, fluorescence in situ hybridization (FISH) analysis, employing universal eukaryotic and fungal probes, was performed on GBM sections.

Results: Preliminary results illuminate intriguing variations in the microbiome and mycobiome profiles between GBM patients and their healthy counterparts. Notably, GBM patients exhibited lower abundance of Bacteroidaceae and Lachnospiraceae, while higher levels of Candida and Cryptococcus were observed compared to the control group. FISH analysis did not reveal the presence of bacteria or fungi in GBM sections.

Conclusions: These preliminary findings offer valuable insights into the distinctive microbiome landscape in GBM patients, shedding light on microbial and fungal imbalances that may play a role in the pathogenesis of this aggressive brain tumor. The observed alterations in microbial composition could potentially influence therapeutic strategies, as identifying key microbial players may open avenues for novel treatment modalities aimed at improving clinical outcomes for GBM patients.

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Embolization of Middle Meningeal Artery in Patients with Chronic Subdural Hematoma: a Monocentric Experience

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Oral e-Poster Presentations - Booth 4: Trauma and Critical Care 2, Trauma and Critical Care 3, Trauma and Critical Care 4, October 15, 2024, 12:40 PM - 2:10 PM

Background: The endovascular treatment of middle meningeal artery (MMAe) for Chronic Subdural Hematoma (cSDH) is undergoing analysis of efficacy and effectiveness with several trials. Many series reported satisfactory results in terms of recurrence. Debated issue is the definition of effectiveness in terms of