

P.129**Patterns of spinal metastatic disease and mechanical instability: a retrospective correlation with tumor histology**

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doi: 10.1017/cjn.2016.228

Background: This study aims to provide epidemiological data concerning spinal instability and patterns of metastatic invasion of the spine based on tumor histology. **Methods:** We allocated 285 patients with spinal metastatic disease through a retrospective review. SINS was calculated using good-quality computed tomography (CT) imaging studies. Spinal metastases were also grouped into intracompartmental, extracompartmental or multiple metastases. **Results:** Esophageal cancer was the least likely to be associated with instability with about 64% of cases being stable. The highest rate of instability scores was observed in breast carcinoma with 18% of cases graded as unstable. Renal cell carcinoma was associated with lytic spinal metastases whereas blastic metastases mostly occurred in prostate carcinoma ($P < 0.001$). Whereas 68.1% of cases represented multiple metastases, the remainder was associated with either intracompartmental (13.3%) or extracompartmental (18.6%) disease. The highest degrees of spinal instability (intermediate and unstable categories) were associated with extra-compartmental metastatic disease ($P < 0.001$). **Conclusions:** This study sheds light on the patterns of spinal metastatic disease and mechanical instability on the basis of tumor histology, utilizing standardized scoring systems. The utilization of such scoring systems allows for a standardized approach towards description and analysis of spinal metastasis facilitating clinical research in this avenue.

P.130**The natural history of central cord syndrome and the role of surgical intervention: a retrospective review from 2005-2010**

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doi: 10.1017/cjn.2016.229

Background: The management of central cord syndrome (CCS) is controversial. There is a perception that CCS patients tend to improve without the need for surgical intervention. The purpose of this study was to compare the clinical improvements of patients with traumatic SCI, both with and without CCS. **Methods:** Nova Scotia Provincial Trauma Registry was retrospectively reviewed from 2005-2010. Improvement in the American Spinal Injury Association (ASIA) Impairment Scale (AIS) was determined after mean 5 months follow-up. **Results:** The study population comprised 96 cases with SCI, subdivided into cases with AIS grade A, non-CCS cases with AIS grades B-D and CCS cases. 88% of the non-CCS and 65% of the CCS patients underwent surgical decompression, with mean operative times being 71.6 ± 137.8 and 102.9 ± 144.6 post injury ($p = 0.45$). The mean improvements in the mean ASIA motor scores for the three groups were 1.3 ± 6.5 and 15.6 ± 35.0 and 22.5 ± 14.6 ($p = 0.004$) respectively, with a statistically significant difference only between the CCS and AIS grade A groups ($p < 0.001$). 20%, 54% and 10% of the patients respectively, underwent an improvement of \geq one AIS

grades ($p = 0.018$, $c2 = 8.0$). **Conclusions:** This retrospective review investigates the natural history of CCS and explores the role of surgical intervention on optimizing patient outcome.

P.131**Lumbar fusion for degenerative disease: a systematic review and meta-analysis**

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doi: 10.1017/cjn.2016.230

Background: Lumbar fusion for degenerative indications is associated with a great degree of practice variation. We summarize the current evidence on the comparative safety and efficacy of lumbar fusion, decompression alone, or non-operative care for degenerative indications. **Methods:** Literature search of electronic bibliographic databases was conducted. Comparative studies reporting validated measures of safety or efficacy were included. Treatments effects were calculated through DerSimonian and Laird random effects models. **Results:** We retrieved 62 studies (17 randomized controlled, 15 prospective, 15 retrospective, and 15 registries), enrolling a total 302,347 adult patients. Disability, pain, and patient satisfaction following fusion, decompression alone, or non-operative care were dependent on surgical indications and study methodology. Relative to decompression alone, the risk of reoperation following fusion was increased for spinal stenosis (relative risk [RR] 1.17, 95% CI 1.06 to 1.30, $p < 0.004$) and decreased for spondylolisthesis (RR 0.71, 95% CI 0.59 to 0.84, $p < 0.001$). In all indications, complications were more frequent following fusion (RR 1.88, 95% CI 1.37 to 2.58, $p < 0.001$). Mortality and treatment modality were not associated. **Conclusions:** Improvements were greatest in patients undergoing fusion for spondylolisthesis while complications limited the role of fusion for spinal stenosis. The relative safety and efficacy of fusion for chronic low back pain suggested careful patient selection is required.

P.132**Post-traumatic spinal pseudomeningocele with delayed neurological deterioration**

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doi: 10.1017/cjn.2016.231

Background: Post-traumatic spinal pseudomeningoceles are uncommon sequelae of brachial plexus injuries. These cerebrospinal fluid (CSF) collections have rarely been described to occur within the spinal canal with resultant cord compression and neurological deficit. We present the case of an intracanalicular pseudomeningocele causing spinal cord compression and progressive radiculomyelopathic weakness more than a decade after the original injury. **Methods:** Case report and review of the literature. **Results:** A 34 year old man presented with progressive cervical radiculomyelopathy 16 years after sustaining a brachial plexus avulsion injury. Magnetic resonance imaging revealed an anterior epidural intracanalicular fluid collection from C3 to L3, with focal compression at the cervicothoracic junction. Surgical intervention involved a C7 to T3 laminectomy and