ligament or ligamentum flavum was associated with worse outcomes at initial examination and at 1-year follow up. Lesion length was also significantly associated with outcomes at 1 year evaluation and initial evaluation. *Conclusions:* Early MRI has an important prognostic value in patients suffering SCIWORA. Lesion length is a powerful predictor of outcome. Soft tissue injury and spinal cord changes play a role in the severity of injury as well as the ability to recover.

F.02

Towards the complete control of brain metastases using surveillance screening and stereotactic radiosurgery

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Background: The incidence of brain metastases is increasing with the development of improved systemic therapies with limited impact on intracranial disease. The purpose of this study was to determine if there is a threshold tumor size below which local control (LC) rates approach 100% after stereotactic radiosurgery (SRS). *Methods:* 200 patients with 1237 tumors were identified from a prospective registry of patients having undergone SRS between 2012-2014. Histology consisted predominantly of non-small cell lung cancer (NSCLC), melanoma and breast cancer. *Results:* The median tumor size was 6mm in diameter or 70mm^3 and most commonly NSCLC. Thirty-three tumors had local progression at a median time of 8.8 months. The 1- and 2-year actuarial LC for all tumors were 97% and 93%. LC of 100% was seen for intracranial metastases less than 100mm^3 or 6mm in diameter, independent of histology. Total tumor volume was an independent predictor of overall survival, after adjusting for age, KPS and extracranial disease status. *Conclusions:* SRS can achieve LC rates approaching 100% for subcentimeter metastases. The earlier detection and prompt treatment of small intracranial metastases may prevent the development of neurological symptoms, the need for surgical resection, and potentially improve overall survival. The results of this study would favour the implementation of routine staging MRIs.

F.03

Timing of incidence and recovery of delayed facial palsy after vestibular schwannoma resection: insight into mechanisms

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Background: Delayed facial palsy (DFP) after resection of vestibular schwannomas (VS) is described as worsening of facial nerve function after a normal postoperative result. Several mechanisms have been postulated to explain this phenomenon, although none satisfactorily explain all of its features. Furthermore, systematic documentation of recovery rates is lacking. *Methods:* 403 consecutive cases of VS resection between 2001 and 2015 were reviewed. Patients with preoperative facial palsy were excluded. Patients developing significant facial palsy (HB grade ≥ 3) were categorized into groups based on timing of onset: immediate facial palsy (IFP), "early-onset" DFP (within 48h), and "late-onset" DFP (after 48h).

IFP patients were subdivided into "minor" (HB grade 3) and "major" (HB grade≥4) groups. These groups were compared with respect to demographics, intraoperative data, and recovery. *Results:* The late-onset DFP group demonstrated the quickest recovery to HB≤2 (2.9 weeks), followed by the minor IFP group (8.5 weeks), then the early-onset DFP group (53 weeks). Major IFP group exhibited the poorest recovery with only 32% recovering to HB grade≤2 within one year. *Conclusions:* The bimodal distribution in recovery time in delayed facial palsy patients implies separate underlying phenomena. We propose that a delayed demyelination of the facial nerve occurs in late-onset DFP, and best explains the uniformly rapid recovery observed.

F.04

Flow diversion in the treatment of aneurysms: A randomized care trial and registry

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Background: The Flow diversion in the treatment of Intracranial Aneurysm (FIAT) trial was designed to guide the clinical use of flow diversion. *Methods:* FIAT proposed randomized allocation flow diversion or standard management (observation, coiling, parent vessel occlusion, or clipping), and a registry of non-randomized patients treated with flow diversion. Primary safety outcome was death or dependency (mRS > 2) at 3 months. Primary efficacy outcome was angiographic occlusion at 3-12 months combined with independent clinical outcome. *Results:* Of 112 participating patients recruited, 78 were randomized, and 34 received flow diversion within the registry. The study was halted for safety concerns. Twelve of 73 patients (16.4%; CI [9.7% -26.7%]) who were allocated or received flow diversion at any time were dead (n=8) or dependent (n=4) at 3 months or more, crossing a predefined safety boundary. Death or dependency occurred in 5 of 36 patients randomly allocated flow diversion and in 5 of 36 patients allocated standard treatment (13.9%; [6.1%-28.7%]). Efficacy was below hypothesized expectations: 15 of 36 patients (41.7%; [27.1%-57.8%]) randomly allocated flow diversion failed to reach the primary outcome, as compared to 11 of 36 patients allocated standard treatment (30.1%; [18.0%-46.9%]). *Conclusions:* Flow diversion was not as safe and effective as hypothesized. More randomized trials are needed.

F.05

Characterization of NBCA glue polymerization for embolization of brain AVM's

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Background: Brain arteriovenous malformations (AVM's) are abnormal connections between arteries and veins. Endovascular glue embolization with N-butyl cyanoacrylate (NBCA) is an accepted form of treatment, with most complications related to timing of polymerization. Current literature reports a wide range of polymerization