## **Beaujon Hospital**

The Beaujon Hospital (French: Hôpital Beaujon) is located in Clichy, Paris, France and is operated by APHDP.

It was named after Nicolas Beaujon, an eighteenth-century French banker. It opened in 1935 and was designed by Jean Walter.

1. World Neurosurg. 2019 Jan 5. pii: S1878-8750(18)32795-5. doi: 10.1016/j.wneu.2018.11.234. [Epub ahead of print]

Understanding anatomy of the petrous pyramid - a new compartmental approach.

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BACKGROUND: Surgical anatomy of the petrous pyramid has always been a challenge, especially in the beginning of the training process. Providing an easier, holistic approach can be of help to everyone with interest in learning and teaching skull base anatomy. We present the complex organization of the petrous pyramid anatomy using a new compartmental approach that is simple to understand and remember. METHODS: The contents of the petrous pyramid of eight temporal bones were exposed through progressive drilling of the superior surface. RESULTS: The petrous pyramid is made of a bony container, while its contents were grouped into four compartments (mucosal, cutaneous, neural and vascular). Two reference lines were identified (mucosal and external-internal auditory canal lines) intersecting at the level of the middle ear. The localization of contents relative to these reference lines was then described and two methods of segmentation; the X-method and V-method, were then proposed. This description was then used to describe middle ear relationships, facial nerve anatomy and air cell distribution. CONCLUSION: This new simple compartmental approach allows a comprehensive understanding of the distribution of petrous pyramid contents. Dividing it into anatomical compartments ,and then navigating this mental map along specific reference points, lines, spaces, and segments could bring a useful tool to teach or learn its complex tridimensional anatomy.

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Treatment of Ruptured Intracranial Aneurysms Using the Woven EndoBridge Device: A Two-Center

Experience.

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BACKGROUND: The Woven EndoBridge (WEB) device is a new treatment modality developed for broad-necked unruptured intracranial aneurysms (IA) but shows potential for the treatment of ruptured IAs as well. Our aim was to describe 6-month aneurysm obliteration rates, clinical outcomes and procedure related complications after WEB treatment for ruptured IAs from two academic centers. METHODS: We conducted a retrospective observational study, including all consecutive patients treated with the WEB device (WEB Single Layer [SL] and Single-Layer Sphere [SLS]) for a ruptured IA causing acute subarachnoid hemorrhage (SAH) between 2014 (start of use) and 2017. Primary outcome was angiographic aneurysm obliteration (Beaujon Occlusion Scale Score [BOSS]) rate. Secondary outcomes were early re-bleedings, complications and patient outcome (death and modified Rankin Scale). RESULTS: A total of 33 patients with ruptured IAs were treated 0-4 days from IA rupture. Out of 27 survivors, six-month angiographic follow-up was available for 26 patients, out of which 81% showed complete occlusion. Of the 27 survivors, 24 patients (89%) had a favorable neurological outcome at six-months after SAH. Two aneurysms were re-treated (8% of all). There was one fatal procedure related complication. No early aneurysm re-bleedings were noted. CONCLUSION: For anatomically suitable ruptured IAs, WEB device treatment seems to be safe and results in acceptable occlusion rates. Still, larger studies with long-term results are needed before recommendations can be made.

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The molecular landscape of glioma in patients with Neurofibromatosis 1.

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Neurofibromatosis type 1 (NF1) is a common tumor predisposition syndrome in which glioma is one of the prevalent tumors. Gliomagenesis in NF1 results in a heterogeneous spectrum of low- to high-grade neoplasms occurring during the entire lifespan of patients. The pattern of genetic and epigenetic alterations of glioma that develops in NF1 patients and the similarities with sporadic glioma remain unknown. Here, we present the molecular landscape of low- and high-grade gliomas in patients affected by NF1 (NF1-glioma). We found that the predisposing germline mutation of the NF1 gene was frequently converted to homozygosity and the somatic mutational load of NF1-glioma was influenced by age and grade. High-grade tumors harbored genetic alterations of TP53 and CDKN2A, frequent mutations of ATRX associated with Alternative Lengthening of Telomere, and were enriched in genetic alterations of transcription/chromatin regulation and PI3 kinase pathways. Low-grade

tumors exhibited fewer mutations that were over-represented in genes of the MAP kinase pathway. Approximately 50% of low-grade NF1-gliomas displayed an immune signature, T lymphocyte infiltrates, and increased neo-antigen load. DNA methylation assigned NF1-glioma to LGm6, a poorly defined Isocitrate Dehydrogenase 1 wild-type subgroup enriched with ATRX mutations. Thus, the profiling of NF1-glioma defined a distinct landscape that recapitulates a subset of sporadic tumors.

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4. Neuro Oncol. 2018 Jul 5;20(8):1113-1121. doi: 10.1093/neuonc/nox231.

De novo and secondary anaplastic meningiomas: a study of clinical and histomolecular prognostic factors.

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Background: Following recent studies underlining the differences between de novo and secondary anaplastic meningiomas and the prognostic value of telomerase reverse transcriptase (TERT) promoter mutation, we decided to conduct a multicenter retrospective study to address these questions and determine specific prognostic factors in each of these 2 anaplastic meningioma subgroups. Methods: Among the 68 meningioma cases initially selected, only 57 were confirmed as anaplastic meningiomas after centralized pathological review. TERT promoter mutation analysis was performed in all cases. Results: Median overall survival was 2.6 years and 5-year survival rate was 10%. This study confirmed the better prognosis of de novo anaplastic meningiomas (28 tumors) compared with secondary anaplastic meningiomas (29 tumors) (P = 0.02). In the "de novo" group, meningiomas diagnosed on histological anaplasia alone had a better prognosis than those in patients with a high number of mitoses with or without anaplasia (P = 0.01). In the "secondary" group, tumors demonstrate very heterogeneous clinical courses leading to malignant transformation, and time to first relapse as a low-grade tumor was a strong predictor of overall survival (P = 0.0007). TERT promoter mutation in anaplastic meningiomas was rare (14%) and did not influence overall survival but was associated with a shorter recurrence-free survival in the secondary anaplastic meningioma subgroup (P = 0.02). The absence of TERT promoter methylation, although rare (3/33 cases), may be associated with prolonged overall survival (P = 0.02). Conclusion: This study highlights the different prognoses of de novo and secondary anaplastic meningiomas with specific prognostic factors in each subgroup. The analysis of TERT mutation and methylation could provide additional prognostic insights.

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Prognostic factors for survival in adult patients with recurrent glioblastoma: a decision-tree-based model.

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We assessed prognostic factors in relation to OS from progression in recurrent glioblastomas. Retrospective multicentric study enrolling 407 (training set) and 370 (external validation set) adult patients with a recurrent supratentorial glioblastoma treated by surgical resection and standard combined chemoradiotherapy as first-line treatment. Four complementary multivariate prognostic models were evaluated: Cox proportional hazards regression modeling, single-tree recursive partitioning, random survival forest, conditional random forest. Median overall survival from progression was 7.6 months (mean, 10.1; range, 0-86) and 8.0 months (mean, 8.5; range, 0-56) in the training and validation sets, respectively (p = 0.900). Using the Cox model in the training set, independent predictors of poorer overall survival from progression included increasing age at histopathological diagnosis (aHR, 1.47; 95% CI [1.03-2.08]; p = 0.032), RTOG-RPA V-VI classes (aHR, 1.38; 95% CI [1.11-1.73]; p = 0.004), decreasing KPS at progression (aHR, 3.46; 95% CI [2.10-5.72]; p < 0.001), while independent predictors of longer overall survival from progression included surgical resection (aHR, 0.57; 95% CI [0.44-0.73]; p < 0.001) and chemotherapy (aHR, 0.41; 95% CI [0.31-0.55]; p < 0.001). Single-tree recursive partitioning identified KPS at progression, surgical resection at progression, chemotherapy at progression, and RTOG-RPA class at histopathological diagnosis, as main survival predictors in the training set, yielding four risk categories highly predictive of overall survival from progression both in training (p < 0.0001) and validation (p < 0.0001) sets. Both random forest approaches identified KPS at progression as the most important survival predictor. Age, KPS at progression, RTOG-RPA classes, surgical resection at progression and chemotherapy at progression as the rost important survival predictor. Age, KPS at progression, RTOG-RPA classes, surgical resection at progression and chemotherapy at progression as the rost important survival predictor. Age, KPS at progression are prognostic for survival in recurrent glioblastomas and should inform the treatment decisions.

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6. J Neurooncol. 2017 Nov;135(2):285-297. doi: 10.1007/s11060-017-2573-y. Epub 2017 Jul 19.

Recurrent glioblastomas in the elderly after maximal first-line treatment: does preserved overall condition warrant a maximal second-line treatment?

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A growing literature supports maximal safe resection followed by standard combined chemoradiotherapy (i.e. maximal first-line therapy) for selected elderly glioblastoma patients. To assess the prognostic factors from recurrence in elderly glioblastoma patients treated by maximal safe resection followed by standard combined chemoradiotherapy as first-line therapy. Multicentric retrospective analysis comparing the prognosis and optimal oncological management of recurrent glioblastomas between 660 adult patients aged of < 70 years (standard group) and 117 patients aged of  $\geq$ 70 years (elderly group) harboring a supratentorial glioblastoma treated by maximal first-line therapy. From recurrence, both groups did not significantly differ regarding Karnofsky performance status (KPS) (p = 0.482). Oncological treatments from recurrence significantly differed: patients of the elderly group received less frequently oncological treatment from recurrence (p < 0.001), including surgical resection (p < 0.001), Bevacizumab therapy (p < 0.001), and second line chemotherapy other than Temozolomide (p < 0.001). In multivariate analysis, Age  $\geq$ 70 years was not an independent predictor of overall survival from recurrence (p = 0.602), RTOG-RPA classes 5-6 (p = 0.050) and KPS at recurrence <70 (p < 0.001), available in all cases, were independent significant predictors of shorter overall survival from recurrence. Initial removal of  $\geq$  90% of enhancing tumor (p = 0.004), initial completion of the standard combined chemoradiotherapy (p = 0.007), oncological treatment from recurrence (p < 0.001), and particularly surgical resection (p < 0.001), Temozolomide (p = 0.046), and Bevacizumab therapy (p = 0.041) were all significant independent predictors of longer overall survival from recurrence. Elderly patients had substandard care from recurrence whereas age did not impact overall survival from recurrence contrary to KPS at recurrence <70. Treatment options from recurrence should include repeat surgery, second line chemotherapy and anti-angiogenic agents.

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7. Medicine (Baltimore). 2017 May;96(21):e6387. doi: 10.1097/MD.0000000006387.

Characteristics of and risk factors for severe neurological deficit in patients with pyogenic vertebral osteomyelitis: A case-control study.

Lemaignen A(1), Ghout I, Dinh A, Gras G, Fantin B, Zarrouk V, Carlier R, Loret JE, Denes E, Greder A, Lescure FX, Boutoille D, Tattevin P, Issartel B, Cottier JP, Bernard L; DTS (Duration of Treatment for Spondylodiscitis) study group.

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Severe neurological deficit (SND) is a rare but major complication of pyogenic vertebral osteomyelitis (PVO). We aimed to determine the risk factors and the variables associated with clinical improvement for SND during PVO.This case-control study included patients without PVO-associated SND enrolled in a prospective randomized antibiotic duration study, and patients with PVO-associated SND managed in 8 French referral centers. Risk factors for SND were determined by logistic regression.Ninety-seven patients with PVO-associated SND cases, and 297 controls were included. Risk factors for SND were

epidural abscess [adjusted odds ratio, aOR 8.9 (3.8-21)], cervical [aOR 8.2 (2.8-24)], and/or thoracic involvement [aOR 14.8 (5.6-39)], Staphylococcus aureus PVO [aOR 2.5 (1.1-5.3)], and C-reactive protein (CRP) >150 mg/L [aOR 4.1 (1.9-9)]. Among the 81 patients with PVO-associated SND who were evaluated at 3 months, 62% had a favorable outcome, defined as a modified Rankin score  $\leq$  3. No factor was found significantly associated with good outcome, whereas high Charlson index [adjusted Hazard Ratio (aHR) 0.3 (0.1-0.9)], low American Spinal Injury Association (ASIA) impairment scale at diagnosis [aHR 0.4 (0.2-0.9)], and thoracic spinal cord compression [aHR 0.2 (0.08-0.5)] were associated with poor outcome. Duration of antibiotic treatment was not associated with functional outcome.SND is more common in cervical, thoracic, and S. aureus PVO, in the presence of epidural abscess, and when CRP >150 mg/L. Although neurological deterioration occurs in 30% of patients in early follow-up, the functional outcome is quite favorable in most cases after 3 months. The precise impact of optimal surgery and/or corticosteroids therapy must be specified by further studies.

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8. Acta Otorhinolaryngol Ital. 2016 Oct;36(5):408-414. doi: 10.14639/0392-100X-1176.

Surgical treatment of sporadic vestibular schwannoma in a series of 1006 patients.

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The management of sporadic vestibular schwannoma (VS) has evolved in the last decades. The aim of this study was to analyse the evolution in surgical outcomes of VSs operated by a neurotological team between 1990 and 2006 by different approaches. A monocentric retrospective review of medical charts of 1006 patients was performed. In order to assess eventual changes and progress, the 17years period was divided in three periods, each one comprehending 268 VS (1990-1996), 299 VS (1997-2001), and 439 VS (2002-2006). Mean follow-up was 5.9  $\pm$  2.4 years. Overall, complete VS removal was achieved in 99.4% of cases. Mortality rate was 0.3%, meningitis and CSF leaks were observed in 1.2 % and 9 % of the cases, respectively. CSF leakage decreased from 11.6% to 7.1% between the first and last period (p < 0.01) as well as revision surgery from 3.4 % to 0.9 % (p < 0.05). Facial nerve was anatomically preserved in 97.7% of cases. At one year, a good facial nerve function was observed in 85.1% of patients (grade I and II of House-Brackmann grading scale), which ranged between the first and last period from 78.4% to 87.6% (p < 0.05). At one year, hearing preservation was obtained in 61.6% of patients, which increased from the first period to the last one from 50.9% to 69.0% (p < 0.05) (class A+B+C from the AAO-HNS classification). Useful hearing (class A+B) was observed in 33.5% of cases overall, with 21.8% and 42% in the first and last period, respectively ( $p < 10^{-10}$ 0.01). Surgical outcomes of sporadic vestibular schwannoma have improved concerning facial nerve function outcomes, hearing preservation and cerebrospinal fluid (CSF) leaks, mainly due to the neurootological team's experience. Functional results after complete microsurgical removal of large VS depend on experience gained on small VS removal.

Publisher: La gestione dello schwannoma vestibolare (SV) sporadico si è gradualmente evoluta negli ultimi decenni. Lo scopo di questo studio è di analizzare l'evoluzione negli esiti chirurgici dell'exeresi di queste lesioni, realizzata da un team neurotologico tra il 1990 e il 2006, attraverso differenti approcci. È stata eseguita una revisione retrospettica monocentrica dei dati clinici di 1006 pazienti. Al fine di valutare eventuali modifiche e progressi, il periodo di 17 anni è stato diviso in tre periodi, ciascuno comprendente rispettivamente 268 SV (1990- 1996), 299 SV (1997-2001), e 439 SV (2002-2006). Il follow-up medio è stato di 5,9 ± 2,4 anni. Complessivamente l'asportazione totale è stata ottenuta nel 99,4% dei casi. Il tasso di mortalità è stato dello 0,3%, la meningite e la perdita di liquido cefalo rachidiano (LCR) sono stati osservati nel 1,2% e il 9% dei casi, rispettivamente. La frequenza della perdita di LCR è diminuita dal 11,6% al 7,1% tra il primo e dell'ultimo periodo ( $p < 10^{-1}$ 0,01) e la revisione chirurgica dal 3,4% al 0,9% (p < 0,05). Il nervo facciale è stato anatomicamente conservato nel 97,7% dei casi. Ad un anno, una buona funzione del nervo facciale è stata osservata nel 85,1% dei pazienti (I e II grado House- Brackmann), con una variazione tra il primo e l'ultimo periodo che andava dal 78,4% al 87,6% (p < 0,05). Ad un anno post-operatorio la conservazione dell'udito è stata ottenuta nel 61,6% dei pazienti, passando dal 50,9% del primo periodo, al 69,0% del periodo piú recente (p < 0,05) (classe A + B + C dalla classificazione AAO-HNS). L'udito utile (classe A + B) è stato conservato nel 33,5% dei casi complessivamente, con percentuali comprese tra il 21,8% e 42% nel primo e nell'ultimo periodo rispettivamente (p < 0,01). Gli esiti chirurgici dell'asportazion dello schwannoma vestibolare sporadico sono migliorati negli anni per quanto riguarda i risultati funzionali del nervo facciale, la conservazione dell'udito, le perdite di liquido cefalorachidiano, principalmente grazie all'esperienza del team neurotologico. I risultati funzionali dopo la rimozione microchirurgica completa SV di grandi dimensioni dipendono dall' esperienza maturata sulle lesioni di piccole dimensioni. © Copyright by Società Italiana di Otorinolaringologia e Chirurgia Cervico-Facciale, Rome, Italy.

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9. Cancer Chemother Pharmacol. 2016 Jun;77(6):1263-73. doi: 10.1007/s00280-016-3046-2. Epub 2016 May 4.

Mechanism-based modeling of the clinical effects of bevacizumab and everolimus on vestibular schwannomas of patients with neurofibromatosis type 2.

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PURPOSE: To describe the natural growth of vestibular schwannoma in patients with neurofibromatosis type 2 and to predict tumor volume evolution in patients treated with bevacizumab and everolimus. METHODS: Clinical data, including longitudinal tumor volumes in patients treated by bevacizumab (n = 13), everolimus (n = 7) or both (n = 2), were analyzed by means of mathematical modeling techniques. Together with clinical data, data from the literature were also integrated to account for drugs mechanisms of action. RESULTS: We developed a model of vestibular schwannoma growth that takes into account the effect of vascular endothelial growth factors and mammalian target of rapamycin complex 1 on tumor growth. Behaviors, such as tumor growth rebound following everolimus treatment stops, was correctly described with the model. Preliminary results indicate that the model can be used to predict, based on early tumor volume dynamic, tumor response to variation in treatment dose and regimen. CONCLUSION: The developed model successfully describes tumor volume growth before and during bevacizumab and/or everolimus treatment. It might constitute a rational tool to predict patients' response to these drugs, thus potentially improving management of this disease. DOI: 10.1007/s00280-016-3046-2 PMID: 27146400 [Indexed for MEDLINE]

10. J Bone Joint Surg Am. 2016 Mar 16;98(6):441-8. doi: 10.2106/JBJS.O.00209.

OP-1 Compared with Iliac Crest Autograft in Instrumented Posterolateral Fusion: A Randomized, Multicenter Non-Inferiority Trial.

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## Comment in

- J Bone Joint Surg Am. 2016 Mar 16;98(6):e23.
- J Spine Surg. 2016 Dec;2(4):338-344.
- J Spine Surg. 2016 Dec;2(4):345-347.
- J Spine Surg. 2016 Dec;2(4):357-358.

BACKGROUND: Spinal fusion with the use of autograft is a commonly performed procedure. However, harvesting of bone from the iliac crest is associated with complications. Bone morphogenetic proteins (BMPs) are extensively used as alternatives, often without sufficient evidence of safety and efficacy. The purpose of this study was to investigate non-inferiority of osteogenic protein-1 (OP-1, also known as BMP-7) in comparison with iliac crest bone graft in posterolateral fusions. METHODS: This study was a randomized, controlled multicenter trial. Patients who underwent a single-level instrumented posterolateral fusion of the lumbar spine for degenerative or isthmic spondylolisthesis with symptoms of neurological compression were randomized to receive OP-1 combined with local bone (OP-1 group) or autologous bone graft from the iliac crest combined with local bone (autograft group). The primary outcome was overall success, defined as a combination of clinical success and evidence of fusion on computed tomography (CT) scans, at one year postoperatively. RESULTS: One hundred and nineteen patients were included in the study, and analysis of the overall outcome was performed for 113. Noninferiority of OP-1 compared with iliac crest autograft was not found at one year, with a success rate of 40% in the OP-1 group versus 54% in the autograft group (risk difference = -13.3%, 90% confidence interval [CI] = -28.6% to +2.10%). This was due to the lower rate of fusion (the primary aim of OP-1 application) seen on the CT scans in the OP-1 group (54% versus 74% in the autograft group, p = 0.03). There were no adverse events that could be directly related to the use of OP-1. CONCLUSIONS: OP-1 with a collagen carrier was not as effective as autologous iliac crest bone for achieving fusion and cannot be recommended in instrumented posterolateral lumbar fusion procedures. LEVEL OF EVIDENCE: Therapeutic Level I. See Instructions for Authors for a complete description of levels of evidence.

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11. Br J Sports Med. 2016 Jun;50(11):642-3. doi: 10.1136/bjsports-2016-095959. Epub 2016 Mar 3.

It is time to give concussion an operational definition: a 3-step process to diagnose (or rule out) concussion within 48 h of injury: World Rugby guideline.

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DOI: 10.1136/bjsports-2016-095959 PMID: 26941277 [Indexed for MEDLINE]

12. Biomed Res Int. 2015;2015:173872. doi: 10.1155/2015/173872. Epub 2015 Dec 30.

Clinical Performance and Safety of 108 SpineJack Implantations: 1-Year Results of a Prospective Multicentre Single-Arm Registry Study.

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This prospective, consecutive, multicentre observational registry aimed to confirm the safety and clinical performance of the SpineJack system for the treatment of vertebral compression fractures (VCF) of traumatic origin. We enrolled 103 patients (median age: 61.6 years) with 108 VCF due to trauma, or traumatic VCF with associated osteoporosis. Primary outcome was back pain intensity (VAS). Secondary outcomes were Oswestry Disability Index (ODI), EuroQol-VAS, and analgesic

consumption. 48 hours after surgery, a median relative decrease in pain intensity of 81.5% was observed associated with a significant reduction in analgesic intake. Improvements in disability (91.3% decrease in ODI score) and in quality of life (increase 21.1% of EQ-VAS score) were obtained 3 months after surgery. All results were maintained at 12 months. A reduction in the kyphotic angulation was observed postoperatively (-5.4  $\pm$  6.3°; p < 0.001), remained at 12 months (-4.4  $\pm$  6.0°, p = 0.002). No adverse events were implant-related and none required device removal. Three patients (2.9%) experienced procedure-related complications. The overall adjacent fracture rate up to 1 year after surgery was 2.9%. The SpineJack procedure is an effective, low-risk procedure for patients with traumatic VCF allowing a fast and sustained improvement in quality of life over 1 year after surgery.

DOI: 10.1155/2015/173872 PMCID: PMC4710926 PMID: 26844224 [Indexed for MEDLINE]

13. Orphanet J Rare Dis. 2016 Jan 25;11:7. doi: 10.1186/s13023-016-0383-5.

Position statement on the role of healthcare professionals, patient organizations and industry in European Reference Networks.

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A call from the EU for the set-up of European Reference Networks (ERNs) is expected to be launched in the first quarter of 2016. ERNs are intended to improve the care for patients with low prevalent or rare diseases throughout the EU by, among other things, facilitating the pooling and exchange of experience and knowledge and the development of protocols and guidelines. In the past, for example where costly orphan drugs have been concerned, industry has played an important role in facilitating consensus meetings and publication of guidelines. The ERNs should provide a unique opportunity for healthcare professionals and patients to lead these activities in an independent way. However, currently costs for networking activities are not to be covered by EU funds and alternative sources of funding are being explored. There is growing concern that any involvement of the industry in the funding of ERNs and their core activities may create a risk of undue influence. To date, the European Commission has not been explicit in how industry will be engaged in ERNs. We believe that public funding and a conflict of interest policy are needed at the level of the ERNs, Centers of Expertise (CEs), healthcare professionals and patient organizations with the aim of maintaining scientific integrity and independence. Specific attention is needed where it concerns the development of clinical practice guidelines. A proposal for a conflict of interest policy is presented, which may support the development of a framework to facilitate collaboration, safeguard professional integrity and to establish and maintain public acceptability and trust among patients, their organizations and the general public.

DOI: 10.1186/s13023-016-0383-5 PMCID: PMC4727340 PMID: 26809514 [Indexed for MEDLINE]

14. Autophagy. 2016;12(1):1-222. doi: 10.1080/15548627.2015.1100356.

Guidelines for the use and interpretation of assays for monitoring autophagy (3rd edition).

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Delaying standard combined chemoradiotherapy after surgical resection does not impact survival in

newly diagnosed glioblastoma patients.

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BACKGROUND: To assess the influence of the time interval between surgical resection and standard combined chemoradiotherapy on survival in newly diagnosed and homogeneously treated (surgical resection plus standard combined chemoradiotherapy) glioblastoma patients; while controlling confounding factors (extent of resection, carmustine wafer implantation, functional status, neurological deficit, and postoperative complications). METHODS: From 2005 to 2011, 692 adult patients (434 men; mean of  $57.5 \pm 10.8$  years) with a newly diagnosed glioblastoma were enrolled in this retrospective multicentric study. All patients were treated by surgical resection (65.5% total/subtotal resection, 34.5% partial resection; 36.7% carmustine wafer implantation) followed by standard combined chemoradiotherapy (radiotherapy at a median dose of 60 Gy, with daily concomitant and adjuvant temozolomide). Time interval to standard combined chemoradiotherapy was analyzed as a continuous variable and as a dichotomized variable using median and quartiles thresholds. Multivariate analyses using Cox modeling were conducted. RESULTS: The median

progression-free survival was 10.3 months (95% CI, 10.0-11.0). The median overall survival was 19.7 months (95% CI, 18.5-21.0). The median time to initiation of combined chemoradiotherapy was 1.5 months (25% quartile, 1.0; 75% quartile, 2.2; range, 0.1-9.0). On univariate and multivariate analyses, OS and PFS were not significantly influenced by time intervals to adjuvant treatments. On multivariate analysis, female gender, total/subtotal resection and RTOG-RPA classes 3 and 4 were significant independent predictors of improved OS. CONCLUSIONS: Delaying standard combined chemoradiotherapy following surgical resection of newly diagnosed glioblastoma in adult patients does not impact survival.

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Long-term consequences of recurrent sports concussion.

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BACKGROUND: Recurrent concussions are suspected to promote the development of long-term neurological disorders. The study was designed to assess the prevalence of major depressive disorder, mild cognitive disorders and headache in a population of retired high-level sportsmen and rugby players and to study the link between scores evaluating these disorders and the number of reported concussions (RCs). METHODS: A total of 239 retired rugby players (RRPs) and 138 other retired sportsmen (ORSs) who had reached the French national or international championship level between 1985 and 1990 filled in a self-administered questionnaire describing their sociodemographic data, comorbidities and reported history of RC. A phone interview was then conducted using validated questionnaires for the detection of major depressive disorder (PHQ-9), mild cognitive disorders (F-TICS-m) and headache (HIT-6). RESULTS: RRPs reported a higher number of RCs than ORSs (p < 0.001). A higher rate of major depressive disorder (PHQ-9 score > 9) was observed among RRPs compared to ORSs (9% versus 6%) (p = 0.04), and the PHQ-9 score increased with the number of RCs regardless of the type of sport (p = 0.026). A higher rate of mild cognitive disorders (TICS-m score  $\leq$  30) was observed in RRPs compared to ORSs (57% versus 40%, p = 0.005), but no association was found with the number of RC. The HIT-6 score increased with the number of RCs (p = 0.019) CONCLUSIONS: More than 20 years after the end of their career, RRPs present higher rates of depression and lower F-TICS-m scores in favor of mild cognitive impairment compared with ORSs. PHQ-9 and HIT-6 scores were significantly associated with the number of RCs.

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17. Neuro Oncol. 2015 Dec;17(12):1609-19. doi: 10.1093/neuonc/nov126. Epub 2015 Jul 16.

Long-term results of carmustine wafer implantation for newly diagnosed glioblastomas: a controlled propensity-matched analysis of a French multicenter cohort.

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BACKGROUND: The standard of care for newly diagnosed glioblastoma is maximal safe surgical resection, followed by chemoradiation therapy. We assessed carmustine wafer implantation efficacy and safety when used in combination with standard care. METHODS: Included were adult patients with (n = 354, implantation group) and without (n = 433, standard group) carmustine wafer implantation during first surgical resection followed by chemoradiation standard protocol. Multivariate and case-matched analyses (controlled propensity-matched cohort, 262 pairs of patients) were conducted. RESULTS: The median progression-free survival was 12.0 months (95% CI: 10.7-12.6) in the implantation group and 10.0 months (9.0-10.0) in the standard group and the median overall survival was 20.4 months (19.0-22.7) and 18.0 months (17.0-19.0), respectively. Carmustine wafer implantation was independently associated with longer progression-free survival in patients with

subtotal/total surgical resection in the whole series (adjusted hazard ratio [HR], 0.76 [95% CI: 0.63-0.92], P = .005) and after propensity matching (HR, 0.74 [95% CI: 0.60-0.92], P = .008), whereas no significant difference was found for overall survival (HR, 0.95 [0.80-1.13], P = .574; HR, 1.06 [0.87-1.29], P = .561, respectively). Surgical resection at progression whether alone or combined with carmustine wafer implantation was independently associated with longer overall survival in the whole series (HR, 0.58 [0.44-0.76], P < .0001; HR, 0.54 [0.41-0.70], P < .0001, respectively) and after propensity matching (HR, 0.56 [95% CI: 0.40-0.78], P < .0001; HR, 0.46 [95% CI: 0.33-0.64], P < .0001, respectively). The higher postoperative infection rate in the implantation group did not affect survival. CONCLUSIONS: Carmustine wafer implantation during surgical resection followed by the standard chemoradiation protocol for newly diagnosed glioblastoma in adults resulted in a significant progression-free survival benefit.

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18. AJNR Am J Neuroradiol. 2015 Oct;36(10):1942-6. doi: 10.3174/ajnr.A4369. Epub 2015 Jul 9.

Single-Layer WEBs: Intrasaccular Flow Disrupters for Aneurysm Treatment—Feasibility Results from a European Study.

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BACKGROUND AND PURPOSE: The safety and efficiency of the dual-layer Woven EndoBridge (WEB) device has already been published. However, this international multicenter study sought to evaluate the safety of single-layer devices, which are the newest generation of the WEB intrasaccular flow-disrupter family. They have been designed to offer smaller-sized devices with a lower profile to optimize navigability and delivery, which may, in turn, broaden their range of use. MATERIALS AND METHODS: Data from all consecutive patients treated with a single-layer WEB device, in 10 European centers from June 2013 to May 2014 were included. Clinical presentations, technical details, intra- and perioperative complications, and outcomes at discharge were recorded. Clinical and angiographic data at last follow-up were also analyzed when available. RESULTS: Ninety patients with 98 WEB-

treated aneurysms were included in this study. In 93 cases (95%), WEB placement was possible. Complete occlusion at the end of the procedure was obtained in 26 instances (26%). Additional treatment during the procedure (coiling and/or stent placement) was necessary in 12 cases (12.7%). Procedure-related complications occurred in 13 cases, leading to permanent neurologic deficits in 4 patients (4.4%). Early vascular imaging follow-up data were available for 44 patients (57%), with an average time interval of 3.3 months. Treatment-related morbidity and mortality rates at last follow-up were 2.2% and 1.1%, respectively. CONCLUSIONS: In this study, the feasibility and safety of the single-layer WEB device was comparable with that of the double-layer. However, further studies are needed to evaluate long-term efficacies.

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Multicenter testing of the rapid quantification of radical oxygen species in cerebrospinal fluid to diagnose bacterial meningitis.

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PURPOSE: Meningitis is a serious concern after traumatic brain injury (TBI) or neurosurgery. This study tested the level of reactive oxygen species (ROS) in cerebrospinal fluid (CSF) to diagnose meningitis in febrile patients several days after trauma or surgery. METHODS: Febrile patients (temperature > 38°C) after TBI or neurosurgery were included prospectively. ROS were measured in CSF within 4 hours after sampling using luminescence in the basal state and after cell stimulation with phorbol 12myristate 13-acetate (PMA). The study was conducted in a single-center cohort 1 (n = 54, training cohort) and then in a multicenter cohort 2 (n = 136, testing cohort) in the Intensive Care and Neurosurgery departments of two teaching hospitals. The performance of the ROS test was compared with classical CSF criteria, and a diagnostic decision for meningitis was made by two blinded experts. RESULTS: The production of ROS was higher in the CSF of meningitis patients than in non-infected CSF, both in the basal state and after PMA stimulation. In cohort 1, ROS production was associated with a diagnosis of meningitis with an AUC of 0.814 (95% confidence interval (CI) [0.684-0.820]) for steady-state and 0.818 (95% CI [0.655-0.821]) for PMA-activated conditions. The best threshold value obtained in cohort 1 was tested in cohort 2 and showed high negative predictive values and low negative likelihood ratios of 0.94 and 0.36 in the basal state, respectively, and 0.96 and 0.24 after PMA stimulation, respectively. CONCLUSION: The ROS test in CSF appeared suitable for eliminating a diagnosis of bacterial meningitis.

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20. Head Neck. 2016 Apr;38 Suppl 1:E673-9. doi: 10.1002/hed.24067. Epub 2015 Jul 14.

Characterization of endolymphatic sac tumors and von Hippel-Lindau disease in the International Endolymphatic Sac Tumor Registry.

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JM(9), Kanno H(10), Maher ER(11), Krauss T(12), Sansó G(13), Barontini M(13), Letizia C(14), Hader C(15)(16), Schiavi F(17), Zanoletti E(18), Suárez C(19), Offergeld C(5), Malinoc A(20), Zschiedrich S(20), Glasker S(21), Bobin S(22), Sterkers O(23)(24), Ba Huy PT(25), Giraud S(3)(26), Links T(27), Eng C(28), Opocher G(17), Richard S(3)(4), Neumann HP(20); International Endolymphatic Sac Tumor (ELST) Consortium.

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BACKGROUND: Endolymphatic sac tumors (ELSTs) are, with a prevalence of up to 16%, a component of von Hippel-Lindau (VHL) disease. Data from international registries regarding heritable fraction and characteristics, germline VHL mutation frequency, and prevalence are lacking. METHODS: Systematic registration of ELSTs from international centers of otorhinolaryngology and from multidisciplinary VHL centers' registries was performed. Molecular genetic analyses of the VHL gene were offered to all patients. RESULTS: Our population-based registry comprised 93 patients with ELST and 1789 patients with VHL. The prevalence of VHL germline mutations in apparently sporadic ELSTs was 39%. The prevalence of ELSTs in patients with VHL was 3.6%. ELST was the initial manifestation in 32% of patients with VHL-ELST. CONCLUSION: Prevalence of ELST in VHL disease is much lower compared to the literature. VHL-associated ELSTs can be the first presentation of the syndrome and mimic sporadic tumors, thus emphasizing the need of molecular testing in all presentations of ELST. © 2015 Wiley Periodicals, Inc. Head Neck 38: 673-679, 2016.

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21. Neurosurgery. 2014 Sep;75(3):215-9; discussion 219. doi: 10.1227/NEU.00000000000415.

Solitaire AB stent-assisted coiling of wide-necked intracranial aneurysms: mid-term results from the SOLARE Study.

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Author information: (1)\*Department of Interventional Neuroradiology, Hôpital Neurologique Pierre Wertheimer, Hospices Civils de Lyon, Lyon, France; ‡Department of Neuroradiology, Helios Klinikum, Erfurt, Germany; §Department of Neuroradiology, Montpellier University Hospital, Montpellier, France; ¶Department of Interventional Neuroradiology, Dupuytren University Hospital, Limoges, France; ||Department of Neuroradiology, Strasbourg University Hospital, Strasbourg, France; #Department of Neuroradiology, Beaujon Hospital, Paris, France; Department of Neuroradiology, Erasme Hospital, Brussels, Belgium. BACKGROUND: Endovascular treatment of intracranial aneurysms can be technically difficult when the neck is wide. The Solitaire AB stent (Covidien, Irvine, California), the only fully retrieved stent, assists in the coiling of wideneck intracranial aneurysms. OBJECTIVE: To evaluate the mid-term angiographic follow-up of wide-necked aneurysms treated with the Solitaire AB stent. METHODS: SOLARE (SOLitaire Aneurysm Remodeling) is a consecutive, prospective study conducted in 7 European centers. A core laboratory evaluated the postoperative and mid-term (6 month ± 15 days) angiographic results by using the Raymond classification Scale. Recanalization was defined as worsening, and progressive thrombosis was defined as improvement in the Raymond scale score. RESULTS: The mean width of the aneurysm sac was 7.5 mm, and the mean diameter of the aneurysm neck was 4.7 mm. Angiographic mid-term follow-up was obtained in 55 of 65 aneurysms (85.9%). Complete occlusion was achieved in 33 aneurysms (60%); a neck remnant was seen in 16 aneurysms (29.1%) and an aneurysm remnant in 6 aneurysms (10.9%). Of 55 aneurysms, recanalization was observed in 8 aneurysms (14.5%), and progressive thrombosis was observed in 17 aneurysms (30.9%). No bleeding or rebleeding was observed during the follow-up period. CONCLUSION: Stentassisted coiling of wide-necked intracranial aneurysms was found to be safe and effective with the Solitaire AB stent at 6-month follow-up. Angiographic results improve with time due to progressive thrombosis of the aneurysm. DOI: 10.1227/NEU.000000000000415 PMID: 24818784 [Indexed for MEDLINE] 22. Neurology. 2013 Nov 19;81(21 Suppl 1):S33-40. doi: 10.1212/01.wnl.0000435744.57038.af. Recommendations for imaging tumor response in neurofibromatosis clinical trials. Dombi E(1), Ardern-Holmes SL, Babovic-Vuksanovic D, Barker FG, Connor S, Evans DG, Fisher MJ, Goutagny S, Harris GJ, Jaramillo D, Karajannis MA, Korf BR, Mautner V, Plotkin SR, Poussaint TY, Robertson K, Shih CS, Widemann BC; REINS International Collaboration. Author information: (1)From the Pediatric Oncology Branch (E.D., B.C.W.), National Cancer Institute, Bethesda, MD; Department of Neurology (S.L.A.-H.), The Children's Hospital at Westmead, Sydney, Australia; Department of Medical Genetics (D. B.-V.), Mayo Clinic, Rochester, MN; Neurosurgical Service (F.G.B.), Department of Radiology (G.J.H.), and Department of Neurology and Cancer Center (S.R.P.), Massachusetts General Hospital, Boston, MA; Department of Neuroradiology (S.C.), King's College Hospital, London, UK; Department of Genetic Medicine (D.G.E.), MAHSC, St Mary's Hospital, Manchester, UK; Division of Oncology (M.J.F.) and Department of Radiology (D.J.), The Children's Hospital of Philadelphia; Department of Pediatrics (M.J.F.), The Perelman School of Medicine at the University of Pennsylvania, Philadelphia, PA; Department of Neurosurgery (S.G.), Hôpital Beaujon, Clichy, France; Division of Pediatric Hematology/Oncology and NYU Cancer Institute (M.A.K.), NYU Langone Medical Center, New York, NY; Department of Genetics (B.R.K.), University of Alabama at Birmingham, Birmingham, AL; Department of Neurology

(V.M.), University Medical Center Hamburg-Eppendorf, Hamburg, Germany; Department of Radiology (T.Y.P.), Boston Children's Hospital, Boston, MA; and Department of Pediatrics (K.R., C.-S.S.), Riley Hospital for Children, Indianapolis, IN. OBJECTIVE: Neurofibromatosis (NF)-related benign tumors such as plexiform neurofibromas (PN) and vestibular schwannomas (VS) can cause substantial morbidity. Clinical trials directed at these tumors have become available. Due to differences in disease manifestations and the natural history of NF-related tumors, response criteria used for solid cancers (1dimensional/RECIST [Response Evaluation Criteria in Solid Tumors] and bidimensional/World Health Organization) have limited applicability. No standardized response criteria for benign NF tumors exist. The goal of the Tumor Measurement Working Group of the REINS (Response Evaluation in Neurofibromatosis and Schwannomatosis) committee is to propose consensus guidelines for the evaluation of imaging response in clinical trials for NF tumors. METHODS: Currently used imaging endpoints, designs of NF clinical trials, and knowledge of the natural history of NF-related tumors, in particular PN and VS, were reviewed. Consensus recommendations for response evaluation for future studies were developed based on this review and the expertise of group members. **RESULTS: MRI with volumetric analysis is recommended to sensitively and reproducibly** evaluate changes in tumor size in clinical trials. Volumetric analysis requires adherence to specific imaging recommendations. A 20% volume change was chosen to indicate a decrease or increase in tumor size. Use of these criteria in future trials will enable meaningful comparison of results across studies. CONCLUSIONS: The proposed imaging response evaluation guidelines, along with validated clinical outcome measures, will maximize the ability to identify potentially active agents for patients with NF and benign tumors. DOI: 10.1212/01.wnl.0000435744.57038.af PMCID: PMC3908340 PMID: 24249804 [Indexed for MEDLINE] 23. Acta Otolaryngol. 2013 Oct;133(10):1047-52. doi: 10.3109/00016489.2013.808764. Epub 2013 Aug 14. Use of bone anchoring device in electromagnetic computer-assisted navigation in lateral skull base surgery. Bernardeschi D(1), Nguyen Y, Villepelet A, Ferrary E, Mazalaigue S, Kalamarides M, Sterkers O. Author information: (1)AP-HP, Beaujon Hospital, ENT Department , Clichy. CONCLUSION: The use of the bone anchoring device associated with a fiducial marker, both fixed close to the operating field, improves the reproducibility and effectiveness of the computer-assisted navigation in lateral skull base surgery. OBJECTIVES: Computer-assisted navigation in lateral skull base surgery using the electromagnetic system Digipointeur(®) needs an external fiducial marker (titanium screw) close to the operating field to increase position accuracy (PA) to about 1 mm. Displacement of the emitter placed in the mouth (Buccostat(®)) induces a drift of the system, leading to at least 20% of unsuccessful procedures. The aim of this study was to evaluate the PA, stability, and reproducibility of computer-assisted navigation in lateral skull base surgery using a bone anchoring device to provide a fixed registration system near the operating field. METHODS: Forty patients undergoing a lateral skull base procedure with the Digipointeur(®) system performed with both the titanium screw and bone anchoring device were included in this prospective study. They were divided in two groups. In the first one (n = 9), the PA was measured before and after screw registration for five intratemporal landmarks, during a translabyrinthine approach. In the second group (n = 31), all lateral skull base procedures were included and the PA was evaluated visually by the surgeon on different landmarks of the approaches as well as the stability of the system. RESULTS: In the first group, the PA was 7.08  $\pm$  0.59 mm and 0.77  $\pm$  0.17 mm (mean  $\pm$  SEM, p < 0.0001) before and after screw registration, respectively. In the second group, the PA was considered as accurate by the surgeon in all cases and no drift of the system was observed. Computer-assisted surgery was never abandoned due to increased stability of the bone-anchored emitter. DOI: 10.3109/00016489.2013.808764 PMID: 23941593 [Indexed for MEDLINE] 24. Neurosurgery.

2013 Dec;73(6):923-31; discussion 932. doi: 10.1227/NEU.0000000000000132. Intradural extramedullary spinal metastases of non-neurogenic origin: a distinct clinical entity or a subtype of leptomeningeal metastasis? A case-control study. Knafo S(1), Pallud J, Le Rhun E, Parker F, lakovlev G, Roux FX, Page P, Meder JF, Emery E, Devaux B; Club de Neurooncologie of the Société Française de Neurochirurgie. Author information: (1)‡Department of Neurosurgery, Pitié-Salpétrière Hospital, Université Pierre et Marie Curie, Paris, France; §Department of Neurosurgery, Sainte-Anne Hospital Center, Paris, France; ¶University Paris Descartes, Paris, France; **||Centre de Lutte contre le Cancer Oscar Lambret, Lille, France; #Department of Neurosurgery, Bicêtre Hospital, University Paris Sud, Le Kremlin-Bicêtre, France;** Department of Neurosurgery, Beaujon Hospital, University Paris Diderot, Paris, France; #2000 France; **S** (Sainte-Anne Hospital Center, Paris, France; **S**) Paris Descartes, Paris, France; **B** (Sainte-Anne Hospital, University Paris Sud, Le Kremlin-Bicêtre, France; Department of Neurosurgery, Beaujon Hospital, University Paris Diderot, Paris, France; **B** (Sainte-Anne Hospital, Center, Paris, France; **S**) Department of Neuroradiology, Sainte-Anne Hospital Center, Paris, France; **S**) Paris Descartes, Paris, France; Department of Neurosurgery, Beaujon Hospital, University Paris Diderot, Paris, France; **B** (Sainte-Anne Hospital Center, Paris, France; **S**) Department of Neuroradiology, Sainte-Anne Hospital Center, Paris, France; **S**)

BACKGROUND: Leptomeningeal metastases from carcinoma are still poorly understood. OBJECTIVE: To better define the management of unique intradural extramedullary spinal metastases (IESM) from solid cancers of non-neurogenic origin, in particular regarding leptomeningeal metastasis (LM). METHODS: We conducted a retrospective, multicenter, case-control study including 11 patients with IESM matched with 11 patients with LM. Primary endpoint was overall survival; secondary endpoints were diagnostic criteria and prognostic factors. RESULTS: Descriptive analysis showed a clinically significant difference between IESM and LM patients regarding preexisting neurological deficit (45.5% vs 90.1%, P = .06) and malignant cells in cerebrospinal fluid (0% vs 54.5%, P = .03). The median overall survival was significantly higher for IESM patients (732 days) than for patients with LM (53 days; P < .0002). Multivariate analysis showed that preexisting neurological deficit was a negative prognostic factor for overall survival (hazard ratio: 10.2; 95% confidence interval: 1.88-102; P = .04), in contrast to functional improvement with treatment (hazard ratio: 0.01; 95% confidence interval: 0.00-0.52; P = .04). We propose the following diagnostic criteria for IESM: (1) a solid lesion located within the intradural extramedullary space, (2) the absence of other leptomeningeal lesion seen on full-spine injected magnetic resonance imaging, (3) the absence of malignant cells in cerebrospinal fluid, and (4) a histological confirmation of the metastatic nature of the lesion. CONCLUSION: The significant difference in survival between IESM and LM suggests that they are 2 distinct evolutions of the metastatic disease. Distinguishing IESM also has therapeutic consequences because patients can benefit from a focal surgical treatment with functional improvement and extended survival.

DOI: 10.1227/NEU.00000000000132 PMID: 23921711 [Indexed for MEDLINE]

25. J Neurosurg Anesthesiol. 2014 Jan;26(1):37-44. doi: 10.1097/ANA.0b013e31829cc2d6.

Recovery from anesthesia after craniotomy for supratentorial tumors: comparison of propofolremifentanil and sevoflurane-sufentanil (the PROMIFLUNIL trial).

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INTRODUCTION: Rapid recovery after supratentorial tumors (STT) removal is important. Short-acting anesthetics, such as propofol and remifentanil might favor this objective. The aim of this study was to compare the recovery of 2 Bispectral index (BIS)-guided anesthesia protocols combining sevoflurane-

sufentanil (SS) or propofol-remifentanil (PR) administered during craniotomy for STT. MATERIALS AND METHODS: After IRB approval and written consent, patients scheduled for surgical removal of STT were randomized to receive PR or SS. Anesthesia was adjusted to maintain BIS values between 45 and 55. The primary outcome was the time from discontinuation of anesthetics to extubation. Secondary endpoints were: time to respond to a simple order, and to achieve spontaneous ventilation, agitation score at emergence, postoperative Mini Mental State, postoperative Aldrete score, pain Visual Analogical Score, simplified sedation score, Glasgow Coma Scale, and surgical complications. Statistical analyses were performed using analysis of variance. RESULTS: Thirty-five and 31 were included in the SS and PR groups, respectively. Times to extubation was not different between the 2 groups (11.8±6.9 vs. 13.0±8.1 min in PR and SS groups, respectively, P=0.577). Although times to achieve an Aldrete score to 10, a Glasgow Coma Scale to 15, and a MMS to 30 significantly were lower in SS group, no significant difference was found when analyzing time course of these 3 factors over the first postoperative day. All other secondary endpoints were not different between the 2 groups. CONCLUSION: During craniotomy for STT, we could not demonstrate a reduction in the time to extubation when comparing a BIS-guided anesthesia associating PR to a BISguided anesthesia associating SS (Clinicatrials.gov identifier: NCT00389883).

DOI: 10.1097/ANA.0b013e31829cc2d6 PMID: 23774117 [Indexed for MEDLINE]

26. Neurochirurgie. 2013 Feb;59(1):23-9. doi: 10.1016/j.neuchi.2012.09.005. Epub 2012 Dec 14.

Lumbar spinal stenosis: which predictive factors of favorable functional results after decompressive laminectomy?

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BACKGROUND AND PURPOSE: Long-term results of decompressive laminectomy in degenerative lumbar stenosis have been studied in only six prospective studies. The objective of our study was to evaluate the functional outcome at long term of patients after decompressive laminectomy in lumbar stenosis and to determine predictive factors of favorable outcome. METHODS: A prospective cohort data were collected by an independent observer five years after decompressive laminectomy for degenerative lumbar stenosis. The endpoint was the assessment of the Beaujon score for functional evaluation. The result was considered as favorable if the Beaujon score increased by at last five points between the preoperative stage and at follow-up examination. Logistic regression was then performed with univariate and multivariate analysis to reveal predictive factors of good long-term outcome ( $P \le 0.05$ ). RESULTS: The preoperative characteristic of our population (n=98) was a mean age of  $67.3\pm8.8$  years, a low comorbidity (mean Charlson score= $2.8\pm1.5$ ), overweight status (BMI=29.4±6.3) and the mean Beaujon score was 9.3±3.1. At five years after surgery, the mean Beaujon score became 14.1±4.2. Favorable functional outcome concerned 45.9% of our series. The predictive factor of favorable outcome identified in the univariate analysis the neurological deficit (P=0.05) and in the multivariate analysis the low comorbidity (P=0.01). CONCLUSION: The long-term results of surgical treatment of lumbar spinal stenosis were moderate with an improved outcome in 49.5% of cases in our study. The only independent factor to a favorable outcome was the low comorbidity.

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27. Acta Otolaryngol. 2013 Mar;133(3):228-32. doi: 10.3109/00016489.2012.728719. Epub 2012 Nov 6.

Meningioma of geniculate ganglion: case report and review of the literature.

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Although meningioma is a frequent intracranial tumor, it rarely affects the geniculate ganglion of the facial nerve. Facial palsy is the most common symptom. When hearing is preserved (class A or B, AAO-HNS), tumor is best removed through a middle cranial fossa approach. We report the case of a geniculate ganglion meningioma and present its clinical, radiological, and pathological features. Surgical management is discussed. A literature review revealed that only 17 previous cases have been reported during the last 50 years.

DOI: 10.3109/00016489.2012.728719 PMID: 23126639 [Indexed for MEDLINE]

28. J Neurooncol. 2009 Dec;95(3):367-375. doi: 10.1007/s11060-009-9934-0. Epub 2009 Jun 27.

WHO grade II and III meningiomas: a study of prognostic factors.

Durand A(1), Labrousse F(2), Jouvet A(3)(4), Bauchet L(5), Kalamaridès M(6), Menei P(7), Deruty R(8), Moreau JJ(9), Fèvre-Montange M(4), Guyotat J(8).

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Meningiomas represent one of the largest subgroups of intracranial tumors. They are generally benign, but may show a histological progression to malignancy. Grades II and III meningiomas have been less well studied and are not well controlled because of their aggressive behaviour and recurrences. There is no consensus on therapeutic strategies and no prognostic factors are known. In order to determine these parameters, a multi-institutional retrospective analysis was performed in France with the support of the Neuro-Oncology Club of the French Neurosurgical Society. This study was performed on 199 adults treated for WHO grade II (166 patients) or grade III (33 patients) meningiomas between 1990 and 2004 in the Neurosurgery Departments of five French University Hospitals. Data on epidemiology, clinical behaviour and therapy were collected. Overall survival and progression-free survival were analysed as a function of each possible prognostic factor. For patients with grade II meningiomas, the 5- and 10-year OS rates were 78.4 and 53.3%, respectively, while, for patients with grade III meningiomas, the corresponding values were 44.0 and 14.2%. For patients with grade II meningiomas, the 5- and 10-year PFS rates were 48.4 and 22.6%, respectively, the corresponding values for patients with grade III meningiomas being 8.4 and 0%. For the grade II meningiomas, univariate analysis showed that age < 60 years (P < 0.0001) and Simpson 1 resection (P = 0.055) were associated with a longer OS. For the grade III meningiomas, univariate analysis showed that age < 60 years (P < 0.0001) and RT (P = 0.036) were associated with a longer OS.

Histological grade II was found to be associated with a longer PFS (P = 0.0032) and RT reduced the PFS in grade II meningiomas (P = 0.0006) There were no other prognostic factors in terms of PFS for grades II and III meningiomas in univariate analysis. Multivariate analysis confirmed that age (< 60 years), Simpson 1 and histological grade II were independent prognostic factors for survival. This retrospective study might improve the management of grades II and III meningiomas. Prospective trials should delineate strong therapeutic guidelines for high-grade meningiomas.

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29. Neurosurgery. 2008 Oct;63(4 Suppl 2):362-7; discussion 367-8. doi: 10.1227/01.NEU.0000327024.00330.F2.

Optimization of bacterial diagnosis yield after needle aspiration in immunocompetent adults with brain abscesses.

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OBJECTIVE: Brain abscesses (BA) are life threatening, even in immunocompetent patients, in part because microbiological diagnosis is often lacking and management is empirical. Recent epidemiological changes make it all the more important to have a precise microbiological diagnosis. Our purpose was to evaluate the efficacy of a strategy aimed at obtaining a microbiological diagnosis in immunocompetent patients presenting with suspected BAs. METHODS: We conducted a cohort study including all consecutive patients suspected of having BAs according to clinical, biological, and radiological findings. Severely immunocompromised patients were excluded. Aspiration was performed free-hand in patients with superficial abscesses (<1 cm depth from the cortical surface) and under stereotactic guidance in patients with deep-seated abscesses. Microbiological diagnosis was optimized, using the best aerobic and anaerobic growth conditions, blood culture bottles inoculated in the operating room, and molecular biology techniques if necessary. Antibiotic treatment was adapted according to the findings. RESULTS: Twenty-six patients were suspected of having BAs during the study period. Twenty-four patients benefited from aspiration (stereotactic puncture in 3 cases), which was safe, confirmed the diagnosis of BAs, and yielded microbiological diagnosis in all cases, even in those patients who had previously received antibiotics (n = 8; 33%). In 10 patients (42%), microbiological results led to a different choice in antibiotic therapy than the recommended empirical regimen. CONCLUSION: Microbiological diagnosis can be obtained in all cases of BA. This is achieved by the conjunction of rapid needle aspiration and the optimization of microbiological diagnosis resulting from fast management of the surgical specimen, good anaerobic culture conditions, and the use of blood culture bottles and molecular biology techniques when appropriate. Moreover, it is of clinical and therapeutic interest when BAs are suspected in immunocompetent patients.

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30. Clin Infect Dis. 2007 Jun 15;44(12):1555-9. Epub 2007 May 2.

Evaluation of the management of postoperative aseptic meningitis.

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BACKGROUND: A consensus conference recommended empirical antibiotic therapy for all patients with postoperative meningitis and treatment withdrawal after 48 or 72 h if cerebrospinal fluid culture results are negative. However, this approach is not universally accepted and has not been assessed in clinical trials. METHODS: We performed a cohort study of all patients who received a diagnosis of postoperative meningitis from January 1998 through May 2005 in a teaching hospital. From January 1998 through September 2003 (control period), guidelines were lacking or were not implemented. From October 2003 through May 2005 (interventional period), all patients received a predefined intravenous antibiotic therapy that was discontinued on the third day if the meningitis was considered aseptic. Clinical outcome and duration of antibiotic therapy were analyzed for each patient. RESULTS: Seventy-five episodes of postoperative meningitis (21 cases of bacterial meningitis and 54 cases of aseptic meningitis) were investigated. Patients with aseptic meningitis received antibiotic treatment for a mean +/- standard deviation duration of 11+/-5 days during the control period and 3.5+/-2 days during the intervention period (P=.001). The duration of antibiotic treatment for bacterial meningitis was not significantly different between the 2 periods. All episodes of bacterial and aseptic meningitis were cured, and complications were rare during both periods. CONCLUSIONS: Stopping antibiotic treatment after 3 days is effective and safe for patients with postoperative meningitis whose cerebrospinal fluid culture results are negative.

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31. Semin Arthritis Rheum. 2005 Apr;34(5):766-71.

Comparative study of postoperative and spontaneous pyogenic spondylodiscitis.

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OBJECTIVES: Postoperative spondylodiscitis (POS) is poorly characterized, partly owing to its rarity. The aim of this prospective study was to compare the clinical, biological, bacteriological, and imaging features of postoperative and spontaneous spondylodiscitis (SS). METHODS: A multidisciplinary spondylodiscitis cohort follow-up study was conducted between February 1999 and June 2003 in a 500-bed teaching hospital. All patients hospitalized in internal medicine, orthopedic, and neurosurgery wards with a culture-proven diagnosis of pyogenic spondylodiscitis were included. Clinical and bacteriological data were collected. All patients underwent computed tomography and/or magnetic resonance imaging of the spine. RESULTS: Sixteen patients had SS and 7 patients had POS. Patients with POS tended to be younger (52 versus 69 years), with less frequent underlying diseases (29 versus 75%) and a more prolonged interval between symptom onset and diagnosis (16 versus 3.4 weeks) than patients with SS. Blood cultures were positive in 14 and 81% of cases in the POS and SS groups, respectively, and invasive diagnostic procedures were necessary in 86% of patients with POS and 19% of patients with SS (P = 0.005). Staphylococci were the more frequent isolates in both groups but were more frequently coagulase-negative in POS patients than in patients with SS ( P = 0.01). Vertebral edema tended to be more frequent in POS and was located more posteriorly than in SS (P = 0.023). CONCLUSIONS: POS is associated with specific clinical, microbiological, and imaging features possibly related to pathophysiologic characteristics. Knowledge of these characteristics should help reduce the current delay in the diagnosis of POS.

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32. Eur Spine J. 1997;6(3):158-62.

Syringomyelia and Arnold Chiari in scoliosis initially classified as idiopathic: experience with 25 patients.

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Eur Spine J. 1999;8(5):421.

The authors analysed the clinical and radiological findings and the surgical management of 25 patients admitted for scoliosis classified as idiopathic at first presentation, but in fact associated with spinal cord and/or brain stem anomalies. Twenty patients had syringomyelia, 19 had Chiari malformation. Scoliosis was the only presenting symptom when all these patients were referred to the orthopaedic surgeon. On examination, five patients had normal neurological findings, while the others showed very mild neurological deficits. The diagnosis of syringomyelia and Chiari malformation was established by MRI, which is the best form of neuroradiological examination for discovering spinal abnormalities. Neurosurgical treatment is strongly recommended as the first step in the management of "pseudo" idiopathic scoliosis.

PMCID: PMC3454623 PMID: 9258632 [Indexed for MEDLINE]

33. Clin Orthop Relat Res. 1996 Feb;(323):194-201.

Posterolateral fusion for radicular pain in isthmic spondylolisthesis.

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Reported is the outcome for 25 patients in whom spondylolisthesis with radicular pain was treated by posterolateral fusion alone (Group A). These outcomes are compared with those obtained in 23 other patients with the same symptomatology and spondylolisthesis treated by root release and posterolateral fusion (Group B). Most patients had Grade I or II isthmic spondylolisthesis. Results were assessed functionally and radiographically with an average followup of 32 months. Posterolateral fusion in situ provided excellent or good results in 88% of patients according to the modified classification of Stauffer and Coventry. In Group A, radicular pain at exertion disappeared in 92% of patients, and radicular pain at rest disappeared in 88%. In Group B, radicular pain at exertion disappeared in 65% of patients, and radicular pain at rest disappeared in 70%. There was no significant statistical difference between the 2 groups. Resection of the loose lamina and root decompression do not seem to be mandatory. The overall fusion rate was 81%. Instrumentation in case of instability and the use of allografts are advised.

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