Neurosurgical Clinic of the University of Munich

- Pituitary incidentaloma: a Pituitary Society international consensus guideline statement
- Neurophysiology Signal Codecs for the DICOM® Standard: Preliminary Results
- Recanalization and reperfusion in clinically-relevant porcine model of stroke
- EGFRvIII-positive glioblastoma contributes to immune escape and malignant progression via the c-Fos-MDK-LRP1 axis
- BRAF/MEK inhibition induces cell state transitions boosting immune checkpoint sensitivity in BRAF^{V600E}-mutant glioma
- Blood biomarkers for predicting disability worsening in progressive multiple sclerosis: a multinational, individual participant-level analysis
- Multinational Attitudes Toward AI in Health Care and Diagnostics Among Hospital Patients
- Comorbidities Are Associated With Unfavorable Outcome in Aquaporin-4 Antibody Positive Neuromyelitis Optica Spectrum Disorders and Myelin Oligodendrocyte Glycoprotein Antibody-Associated Disease: Exploratory Study From the CROCTINO Cohort

Neurochirurgische Klinik und Poliklinik Campus Großhadern Klinikum der Ludwig-Maximilians-Universität Munich Marchioninistraße 15 81377 München, Germany.

http://neurochir.klinikum.uni-muenchen.de

Prof. Dr. med. Florian Ringel

The operative neurosurgical training programme was restructured from 1991-93 with the concept of having a frame for the categories and the volume of operations for training year 1 to 6 and to continuously escalate the complexity of the interventions.

In a report of 1998, the experiences gained so far as well as the deficiencies are described. Between 1991 and 1995 the number of major neurosurgical operations was in the range of 2100 per year, and about 41-48% of these operations were done–under supervision–by residents. By slowly reducing the number of residents from 13 to 9, the trainees started to gain surgical experience earlier, and the average number of operations performed per year increased markedly (from 82 to 122), approximating more to there preplanned figures, also in the various categories. An important aspect is therefore to adapt the number of trainees relative to the available operative case material. According to there preliminary data, about 250-300 operations per year are needed to train adequately one resident. The evaluation also showed deficiencies in some categories, e.g., in pain treatment and peripheral nerve surgery, where care must be taken to better fulfil the official requirements. The object of a 6-year education is to offer a well balanced training programme with systematic escalation of surgical responsibility until full competency is reached. However, this goal needs to be defined more precisely. The plan presented recently by the Committee for Graduate and Postgraduate Education of the German Society of Neurosurgery may serve as a proposal. A personal surgical log-book would allow a much better record and evaluation the progress of the individual trainee as well as the engagement of the teachers [1)].

Publications

Macas J, Ku MC, Nern C, Bühler H, Remke M, Synowitz M, Franz K, Seifert V, Plate KH, Kettenmann H, Glass R, Momma S. Generation of neuronal progenitor cells in response to tumors in the human brain. Stem Cells: in press

Vinnakota K, Hu F, Ku MC, Georgieva PB, Szulzewsky F, Pohlmann A, Waiczies S, Waiczies H, Niendorf T, Lehnardt S, Hanisch UK, Synowitz M, Markovic D, Wolf SA, Glass R, Kettenmann H. Toll-like receptor 2 mediates microglia/brain macrophage MT1-MMP expression and glioma expansion. Neuro Oncol. 2013: in press

Ku MC, Wolf SA, Respondek D, Matyash V, Pohlmann A, Waiczies S, Waiczies H, Niendorf T, Synowitz M, Glass R, Kettenmann H. GDNF Mediates Glioblastoma Induced Microglia Attraction But Not Astrogliosis. Acta. Neuropathol. 2013: 125(4):609-20.

Tosca L, Glass R, Bronchain O, Philippe L, Ciapa B. PLCγ, G-protein of the Gαq type and cADPr pathway are associated to trigger the fertilization Ca2+ signal in the sea urchin egg. Cell Calcium 2012; 52(5):388-96.

Stock K; Kumar J; Synowitz M; Petrosino S; Imperatore R; Smith ESt J; Wend P; Purfürst B; Nuber UA; Gurok U; Matyash V; Wälzlein JH; Chirasani SR; Dittmar G; Cravatt BF, Momma S, Lewin GR, Ligresti A; De Petrocellis L; Cristino L; Di Marzo V; Kettenmann H; Glass R. Neural precursor cells induce cell death of high-grade astrocytomas via stimulation of TRPV1. Nat. Med. 2012: 18(8): 1232-9.

Markovic DS, Vinnakota K, van Rooijen N, Kiwit J, Synowitz M, Glass R, Kettenmann H. Minocycline reduces glioma expansion and invasion by attenuating microglial MT1-MMP expression. Brain Behav Immun. 2012: 25(4):624-8.

Guo KT, Juerchott K, Fu P, Selbig J, Eigenbrod S, Tonn JC, Schichor C. Isolation and characterization of bone marrow-derived progenitor cells from malignant gliomas. 2012. Anticancer Res. 32(11):4971-82.

Motaln H, Gruden K, Hren M, Schichor C, Primon M, Rotter A, Lah TT. Human mesenchymal stem cells exploit the immune response mediating chemokines to impact the phenotype of glioblastoma. 2012. Cell Transplant. 21(7):1529-45.

Schichor C, Albrecht V, Korte B, Buchner A, Riesenberg R, Mysliwietz J, Paron I, Motaln H, Turnšek TL, Jürchott K, Selbig J, Tonn JC. 2012. Mesenchymal stem cells and glioma cells form a structural as well as a functional syncytium in vitro. Exp Neurol. 234(1):208-19.

Jürchott K, Guo KT, Catchpole G, Feher K, Willmitzer L, Schichor C, Selbig J. 2011. Comparison of metabolite profiles in U87 glioma cells and mesenchymal stem cells. Biosystems. 105(2):130-9.

Egea V, von Baumgarten L, Schichor C, Berninger B, Popp T, Neth P, Goldbrunner R, Kienast Y, Winkler F, Jochum M, Ries C. 2011. TNF-α respecifies human mesenchymal stem cells to a neural fate and promotes migration toward experimental glioma. Cell Death Differ. 18(5):853-63.

Grau S, Thorsteinsdottir J, von Baumgarten L, Winkler F, Tonn JC, Schichor C. Bevacizumab can induce reactivity to VEGF-C and -D in human brain and tumour derived endothelial cells. 2011. J Neurooncol. 104(1):103-12.

Chirasani SR, Sternjak A, Wend P, Momma S, Campos B, Herrmann IM, Graf D, Mitsiadis T, Herold-Mende C, Besser D, Synowitz M, Kettenmann H, Glass R. 2010 Bone morpho-genetic protein-7 release

from endogenous neural precursor cells suppresses the tumourigenicity of stem-like glioblastoma cells. Brain 133(Pt 7):1961-72.

Kronenberg G, Gertz K, Baldinger T, Kirste I, Eckart S, Yildirim F, Ji S, Heuser I, Schröck H, Hörtnagl H, Sohr R, Djoufack PC, Jüttner R, Glass R, Przesdzing I, Kumar J, Freyer D, Hellweg R, Kettenmann H, Fink KB, Endres M. 2010 Impact of actin filament stabilization on adult hippocampal and olfactory bulb neurogenesis. J Neurosci. 3;30(9):3419-31.

Rohe M, Synowitz M, Glass R, Paul SM, Nykjaer A, Willnow TE. 2009 Brain-derived neurotrophic factor reduces amyloidogenic processing through control of SORLA gene expression. J Neurosci. 9;29(49):15472-8.

Markovic, DS; Vinnakota, K; Chirasani, S; Synowitz, M; Raguet, H; Stock, K; Sliwa, M ; Lehmann, S ; Kälin, R; van Rooijen, N; Holmbeck, K; Heppner, FL; Kiwit, J; Matyash, V; Lehnardt, S; Kaminska, B; Glass, R* and Kettenmann, H*. 2009 Glioma induce and exploit microglial MT1-MMP expression for tumour expansion. PNAS; 106: 12530-5 (* equal contribution).

Chirasani SR, Markovic DS, Synowitz M, Eichler SA, Wisniewski P, Kaminska B, Otto A, Wanker E, Schäfer M, Chiarugi P, Meier JC, Kettenmann H and Glass R. 2009. Transferrin receptor mediated iron accumulation controls proliferation and glutamate release in glioma cells. J Mol Med; 87: 153-67.

Walzlein JH, Synowitz M, Engels B, Markovic DS, Gabrusiewicz K, Nikolaev E, Yoshikawa K, Kaminska B, Kempermann G, Uckert W, Kaczmarek L, Kettenmann H and Glass R. 2008.The antitumourigenic response of neural precursors depends on subventricular proliferation and age. Stem Cells; 26: 2945-54.

Grau SJ, Trillsch F, von Lüttichau I, Nelson PJ, Herms J, Tonn JC, Goldbrunner RH. Lymphatic phenotype of tumour vessels in malignant gliomas. Neuropathol Appl Neurobiol. 2008. 34(6):675-9

Grau SJ, Trillsch F, Herms J, Thon N, Nelson PJ, Tonn JC, Goldbrunner R. Expression of VEGFR3 in glioma endothelium correlates with tumor grade. 2007. J Neurooncol. Apr;82(2):141-50.

Kronenberg G, Wang LP, Geraerts M, Babu M, Synowitz M, Vicens P, Lutsch G, Glass R, Yamaguchi M, Baekelandt V, Debyser Z, Kettenmann H and Kempermann G. 2007. Local origin and activity-dependent generation of nestin-expressing protoplasmic astrocytes in CA1. Brain Struct Funct. 212:19-35.

Sliwa M, Markovic D, Gabrusiewicz K, Synowitz M, Glass R, Zawadzka M, Wesolowska A, Kettenmann H and Kaminska B. 2007. The invasion promoting effect of microglia on glioblastoma cells is inhibited by cyclosporin A. Brain. 130:476-89.

Synowitz M, Kiwit J, Kettenmann H and Glass R. 2006. Tumour Young Investigator Award: tropism and antitumourigenic effect of endogenous neural precursors for gliomas. Clin Neurosurg. 53:336-44.

Synowitz M*, Glass R*, Farber K, Markovic D, Kronenberg G, Herrmann K, Schnermann J, Nolte C, van Rooijen N, Kiwit J and Kettenmann H. 2006. A1 adenosine receptors in microglia control glioblastoma-host interaction. Cancer Res. 66:8550-7 (* equal contribution).

Glass R, Synowitz M, Kronenberg G, Walzlein JH, Markovic DS, Wang LP, Gast D, Kiwit J, Kempermann G and Kettenmann H. 2005. Glioblastoma-induced attraction of endogenous neural precursor cells is associated with improved survival. J Neurosci. 25:2637-46.

Markovic DS, Glass R, Synowitz M, van Rooijen N and Kettenmann H. 2005. Microglia stimulate the

invasiveness of glioma cells by increasing the activity of metalloprotease-2. J Neuropathol Exp Neurol. 64:754-62.

Kronenberg G, Wang LP, Synowitz M, Gertz K, Katchanov J, Glass R, Harms C, Kempermann G, Kettenmann H and Endres M. 2005. Nestin-expressing cells divide and adopt a complex electrophysiologic phenotype after transient brain ischemia. J Cereb Blood Flow Metab. 25:1613-1624.

Zhang WL, Huitorel P, Glass R, Fernandez-Serra M, Arnone MI, Chiri S, Picard A and Ciapa B. 2005. A MAPK pathway is involved in the control of mitosis after fertilization of the sea urchin egg. Dev Biol. 282:192-206.

Pinna C, Glass R, Knight GE, Bolego C, Puglisi L and Burnstock G. 2005. Purine- and pyrimidine-induced responses and P2Y receptor characterization in the hamster proximal urethra. Br J Pharmacol. 144:510-8.

Glass R, Loesch A, Bodin P and Burnstock G. 2002. P2X4 and P2X6 receptors associate with VE-cadherin in human endothelial cells. Cell Mol Life Sci. 59:870-81.

Übersichtsartikel:

The Brain Tumour Microenvironment. Charles NA, Holland EC, Gilbertson R, Glass R, Kettenmann H. 2012. Glia.60(3):502-14

Human mesenchymal stem cells and their use in cell-based therapies. Motaln H, Schichor C, Lah TT. 2010 Cancer. 1;116(11):2519-30.

Reulen HJ, März U. 5 years' experience with a structured operative training programme for neurosurgical residents. Acta Neurochir (Wien). 1998;140(11):1197-203. PubMed PMID: 9870068.

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Reulen HJ, März U. 5 years' experience with a structured operative training programme for neurosurgical residents. Acta Neurochir (Wien). 1998;140(11):1197-203. PubMed PMID: 9870068.