

Division of Neurosurgery
University of Cape Town
2009 Academic Report

The Division continued to enjoy an increasing research output and the postgraduate teaching program was developed further; Tony Figaji was promoted *ad hominem* to Associate Professor. Members of the Division were invited to give a number of addresses at international meetings and Assoc Prof Taylor and Dr Le Feuvre were invited to host the 2011 meeting of the World Federation of Therapeutic and Interventional Neuroradiology. Postgraduate teaching received increasing emphasis and the Division hosted the Biennial Codman Neurosurgery Registrar Update for the second time, having convened the inaugural meeting in 1995.

Degrees conferred

Assoc Professor Patrick Semple

PhD Neurosurgery

Pituitary apoplexy: can histopathology, radiological imaging and predisposing factors be used in predicting outcome.

Professor Graham Fieggen

MD Neurosurgery

The Cape Town Stereotactic Pointer: Clinical development and applications

Ursula Rohlwig

MSc (Neuroscience)

The relationship between intracranial pressure and brain oxygenation in children with severe traumatic brain injury.

Postgraduate students

Dr Johan Malan and Dr Ntethelelo Mjoli were appointed as Registrars and Dr Edward Mogere joined the Division as a supernumerary Registrar, funded by the Aga Kahn University in Nairobi, Kenya. Ursula Rohlwig was the first student ever to register for the degree MSc (Neuroscience) in Neurosurgery at UCT. Five additional members of the Division were registered for the degree MMed in Neurosurgery (LC Padayachy, SJ Sandler, C Thompson, MD Gowen, PK Ssenyonga).

Supervised Nelleke Langerak....

Awards

Dr Tony Figaji received the Raimondi Award for the best publication in Child's Nervous System and was promoted *ad hominem* to Associate Professor. Padayachy Krynauw...

Publications

de Villiers JC.

Healers, Helpers and Hospitals. A History of Military Medicine in the Anglo-Boer War.

Protea, Cape Town, Volume 1: pp 1-707; Volume 2: pp1-301

Figaji AA, Zwane E, Fieggen AG, Peter JC, le Roux PD.

Acute clinical grading in pediatric severe traumatic brain injury and its association with subsequent intracranial pressure, cerebral perfusion pressure, and brain oxygenation

Neurosurg Focus 2008; 25 (4): E4

Figaji A, Zwane E, Thompson C, Fieggen AG, Argent AC, Le Roux PD, Peter JC.

Brain tissue oxygen tension monitoring in pediatric severe traumatic brain injury: Part 1: relationship with outcome.

Childs Nerv Syst 2009; 25 (10): 1325-1334

Figaji A, Zwane E, Thompson C, Fieggen AG, Argent AC, Le Roux PD, Peter JC.

Brain tissue oxygen tension monitoring in pediatric severe traumatic brain injury: Part 2: relationship with clinical, physiological and treatment factors.

Childs Nerv Syst 2009; 25 (10): 1335-1345

Langerak NG, Lamberts RP, Fieggen AG, Peter JC, Peacock WJ, Vaughan CL.

Functional status of patients with cerebral palsy according to the ICF-model: a 20 year follow-up study after selective dorsal rhizotomy.

Arch Phys Med Rehab 2009; 90 (6): 994-1003

Figaji AA, Zwane E, Fieggen AG, Siesjo P, Argent AC, Le Roux PD, Peter JC

Pressure autoregulation, intracranial pressure and brain tissue oxygenation in children with severe traumatic brain injury

J Neurosurg Pediatr 2009 Nov (accepted)

Langerak N, Vaughan CL, Hoffman EB, Figaji AA, Fieggen AG, Peter JC

Incidence of spinal deformities in patients with spastic diplegia 17 to 26 years after selective dorsal rhizotomy

Childs Nerv Syst (accepted)

Langerak NG, Hillier SI, Verkoeijen PPJL, Peter JC, Fieggen AG, Vaughan CL

Level of activity and participation in adults with spastic diplegia 17 to 26 years after selective dorsal rhizotomy

Disability and Rehabilitation 2009 (in review)

Presentations at Conferences

International

3rd *International Cerebral Palsy conference*, Sydney, Australia, 18-21 February 2009

Langerak NG, Lamberts RP, Fieggen AG, Peter JC, Vaughan CL

Selective dorsal rhizotomy: a 20 year follow-up study of patients with spastic diplegia.

Department of Neurological and Visual Sciences, University of Verona, Verona, Italy, 6 March 2009

Peter JC, Fieggen AG, Figaji AA, Subramanian N, Langerak NG, Peacock WJ, Arens AL, Vaughan CL.

Selective dorsal rhizotomy in the management of cerebral palsy spasticity: a 25-year experience

World Congress of Neuroendoscopy, Athens, Greece, May 2009

Padayachy LC, Fieggen AG, Figaji AA

Postinfectious hydrocephalus

XXIInd *Congress of the International Society of Biomechanics*, Cape Town, South Africa, 5-9 July 2009

Langerak NG, Tam N, Fieggen AG, Peter JC, Vaughan CL

Functional status of adults with cerebral palsy represented in GMFCS levels and in a gait nomogram

14th *World Congress of Neurosurgery*, Boston, MA, United States, 29 August - 4 September 2009

Fieggen AG, Figaji AA, Subramanian N, Langerak NG, Peacock W, Arens L, Vaughan C, Peter JC.

The management of cerebral palsy spasticity: a 25 year experience

Invited lecture: Pediatric Neurosurgery- an overview

Fieggen AG, Figaji AA, Peter JC.

Neuroendoscopic management of tuberculous hydrocephalus

Invited lecture: Masters of Neuroendoscopy

International Neurotrauma Symposium, San Francisco, CA, United States, September 2009

Figaji AA.

Invited lecture: **Cerebral oedema and decompressive craniectomy children**

XXXVII Annual Meeting of the International Society for Pediatric Neurosurgery,

Los Angeles, CA, United States 11-15 October 2009

Fieggen AG, Figaji AA, Padayachy LC, Peter JC.

Endoscopic third ventriculostomy for post-infectious hydrocephalus

Figaji AA. (Raimondi Award lecture)

Brain tissue oxygen tension monitoring in pediatric severe brain trauma

Rohlwink U, Zwane E, Fieggen AG, Figaji AA.

The determinants and consequences of brain oxygenation in children

Congress of Neurosurgeons 2009 Annual Meeting, New Orleans, LA, United States, 24-29 October 2009

Fieggen AG. Invited lecture: Global disease: Infections. **Neurosurgical manifestations of HIV**

Figaji AA. Invited lecture: **Pediatric Neurotrauma Update**

Figaji AA. Invited lecture: **Managing intracranial masses in the developing world**

National

Dr Welsh convened a national symposium entitled *Cervical Spine Masterclass*, held at the SSiSA in March. **Professor Fieggen** was invited to give a Plenary address at the PANDA national meeting in November 2009.

Local

Members of the Division presented at the Annual Research Days of the Department of Surgery and the School of Child and Adolescent Health, as well as the Grand Rounds of Groote Schuur Hospital and the UCT Students Surgical Society.

Policy documents

Assoc Professor Taylor updated the Head Injury Guidelines for the Western Cape.

Research Grants

- The long-term sequelae of Selective Dorsal Rhizotomy in Cerebral Palsy patients
MRC Self-initiated Research Grant (PI: Professor AG Fieggen: 2008-2010)
- Investigating traumatic brain injury in children: a collaborative study between Lund University and the University of Cape Town; SIDA/NRF grant GUN 2072790 (PI: Dr AA Figaji (UCT) and Dr P Siesjö (Lund): 2006-2008)
- Multimodality monitoring of Traumatic Brain Injury; a collaborative study between the University of Philadelphia and the University of Cape Town; Integra Foundation (PI: Dr AA Figaji (UCT) and Dr P le Roux (U Penn): 2008-2010)

Editorial activities

Emeritus Professor JC Peter serves on the International Advisory Board of *Neurosurgery*.

Professor Fieggen was appointed to the International Advisory Board of *Neurosurgery* and serves on the editorial boards of *Child's Nervous System*, *Journal of Paediatric Neurosciences*, *African Journal of Neurological Sciences* and *World Neurosurgery*.

Associate Prof Taylor serves on the editorial board of *Interventional Neuroradiology*

Teaching

Undergraduate

Members of the Division continue to teach medical students in the following areas

- MBChB III: Videoconferencing on Spina Bifida and lectures on congenital anomalies and hydrocephalus
- MBChB V: four-week Neurosciences block
 - 6 tutorials on specific topics, with material on Vula
 - weekly teaching ward round
 - two mornings spent in ward/ theatre
- MBChB VI: weekly tutorial on Paediatric Neurosurgery as part of Paediatric Surgery

Postgraduate

The two-year curriculum of topics supervised by Emeritus Professor JC Peter continued; a monthly Journal Club was reintroduced.

Visiting Professors

Professor J Destandau from Bordeaux, France visited Dr Welsh and participated in an Endoscopic Discectomy symposium, performing surgery with a video linkup for teaching.

Dr Francesco Sala (Verona), **Dr Dachling Pang** and **Dr Yongjin Hou** (San Francisco) lectured on the Biennial Registrar Update in August and participated in surgery at Red Cross Children's Hospital, introducing intraoperative neurophysiological monitoring.

Professional activities

Professor Fieggen and **Assoc Prof Semple** continued to serve on the Council of the College of Neurosurgeons of South Africa for the triennium 2008-2011, with Assoc Prof Semple serving as Secretary of the College and also a Senator of the Colleges of Medicine of South Africa.

Assoc Prof Allan Taylor continued to serve as Secretary of the Society of Neurosurgeons of South Africa for 2008-2010 and **Dr Norman Fisher-Jeffes** (part-time Senior Lecturer) continued his term as President of the Society.

Dr David Welsh continued to serve on the Executive of the South African Spine Society.

Dr Roger Melvill (part-time Senior Lecturer) was elected as Vice-President of the World Society for Stereotactic and Functional Neurosurgery (WSSFN).