Neurosurgery

- The epitome of accuracy and precision
- No instrument is too refined
- Know for long hours of surgery
- We are the target of jokes such as:
  - The tumour is recurring while we operate

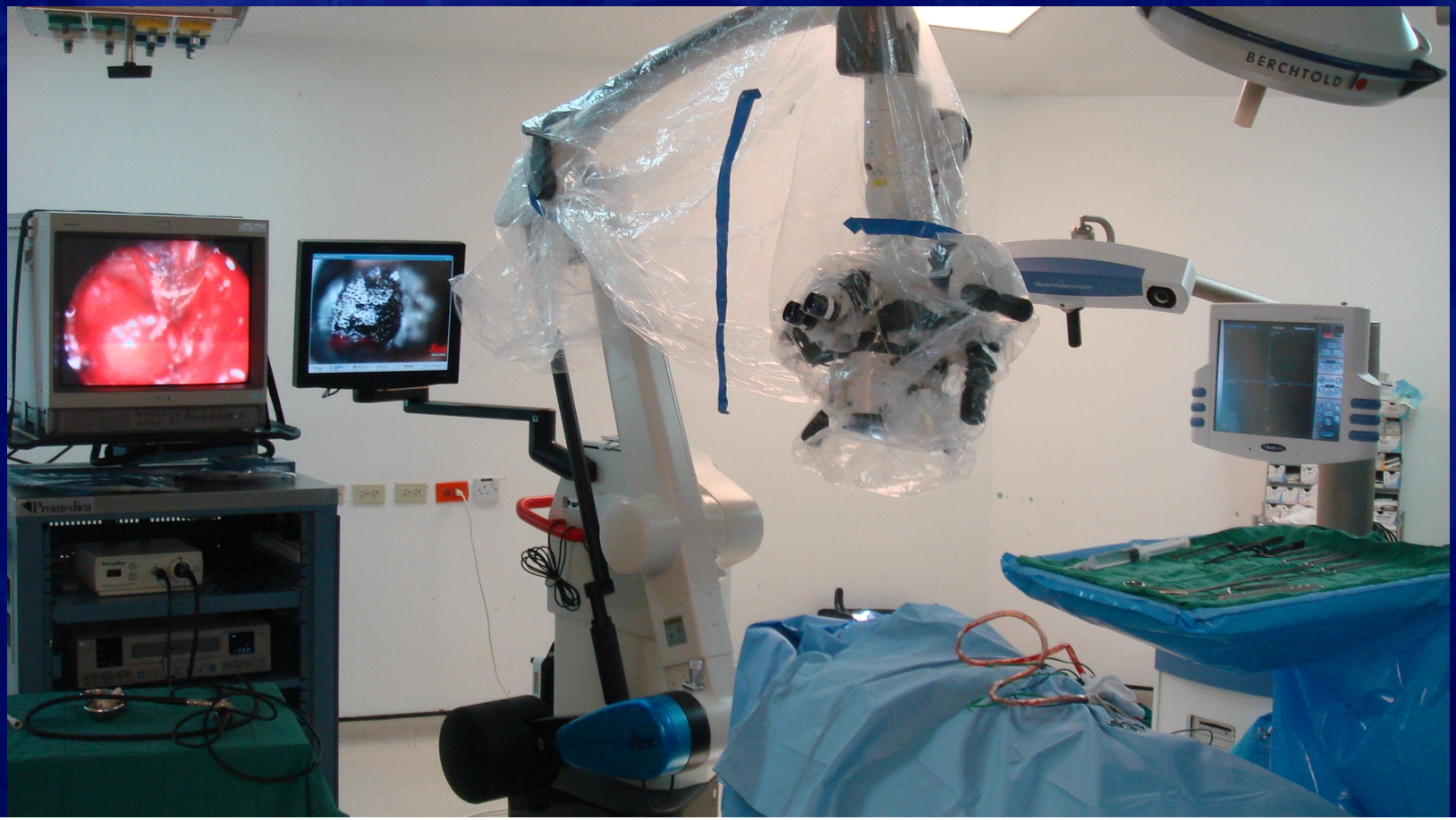
Neurosurgical techniques for surgical risk reduction

- Improved technologies – Image guidance
- Endoscopic approaches where possible
- Meticulous tissue handling and operative technique
- Skullbase Approaches
- Less Exposure technique

New Frontiers demand Innovative Technologies

Canada Arm on ISS
sts112-709-033

Can technology reduce the risk in diabetic patients

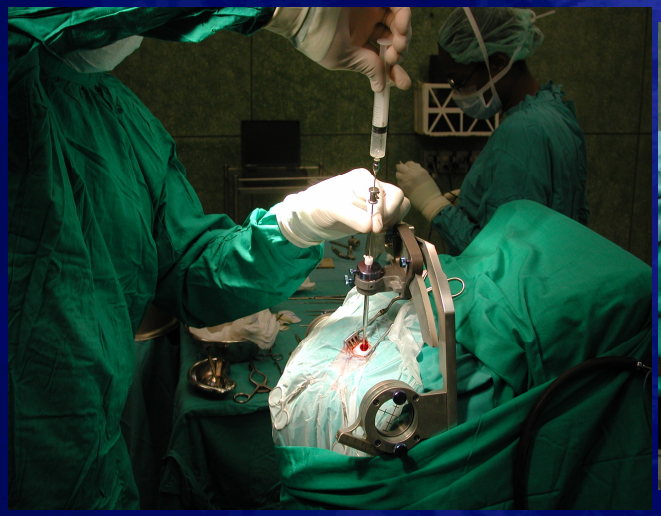


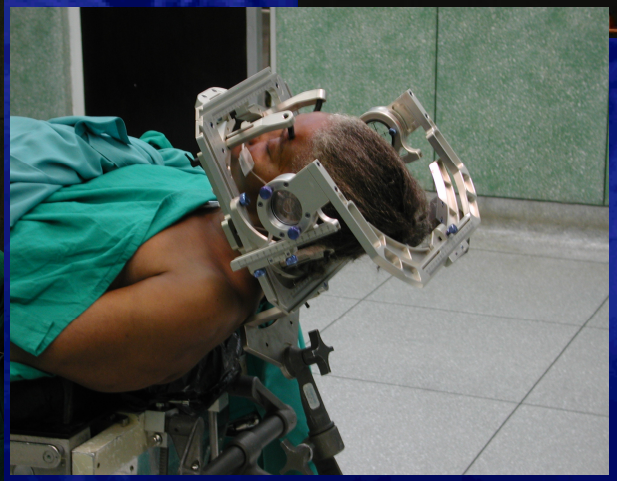
History of Stereotaxis

THE STRUCTURE AND FUNCTIONS OF THE CEREBELLUM EXAMINED BY A NEW METHOD.*

By SIR VICTOR HORSLEY, F.R.S., F.R.C.S.,
AND
R. H. CLARKE, M.A., M.B.
(*From the Laboratory of Pathological Chemistry, University College, London.*)

PART I.—METHODS.

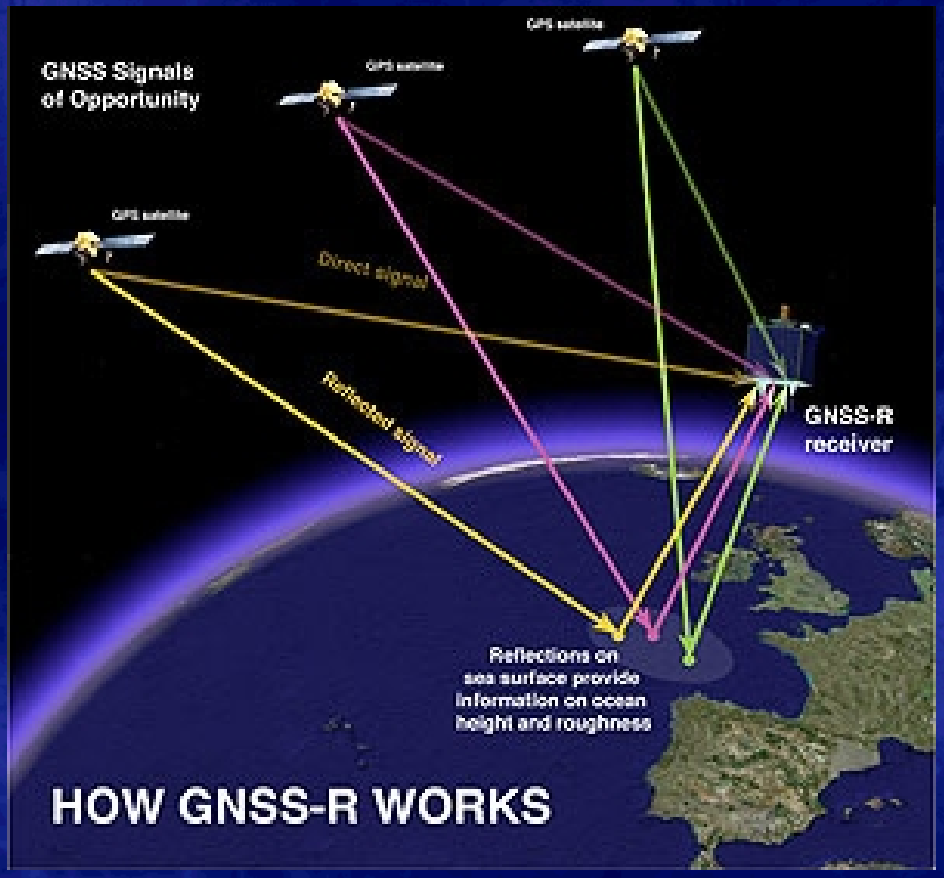




Courtesy of Surradic UWI

Can machines improve human vision in neurosurgery?

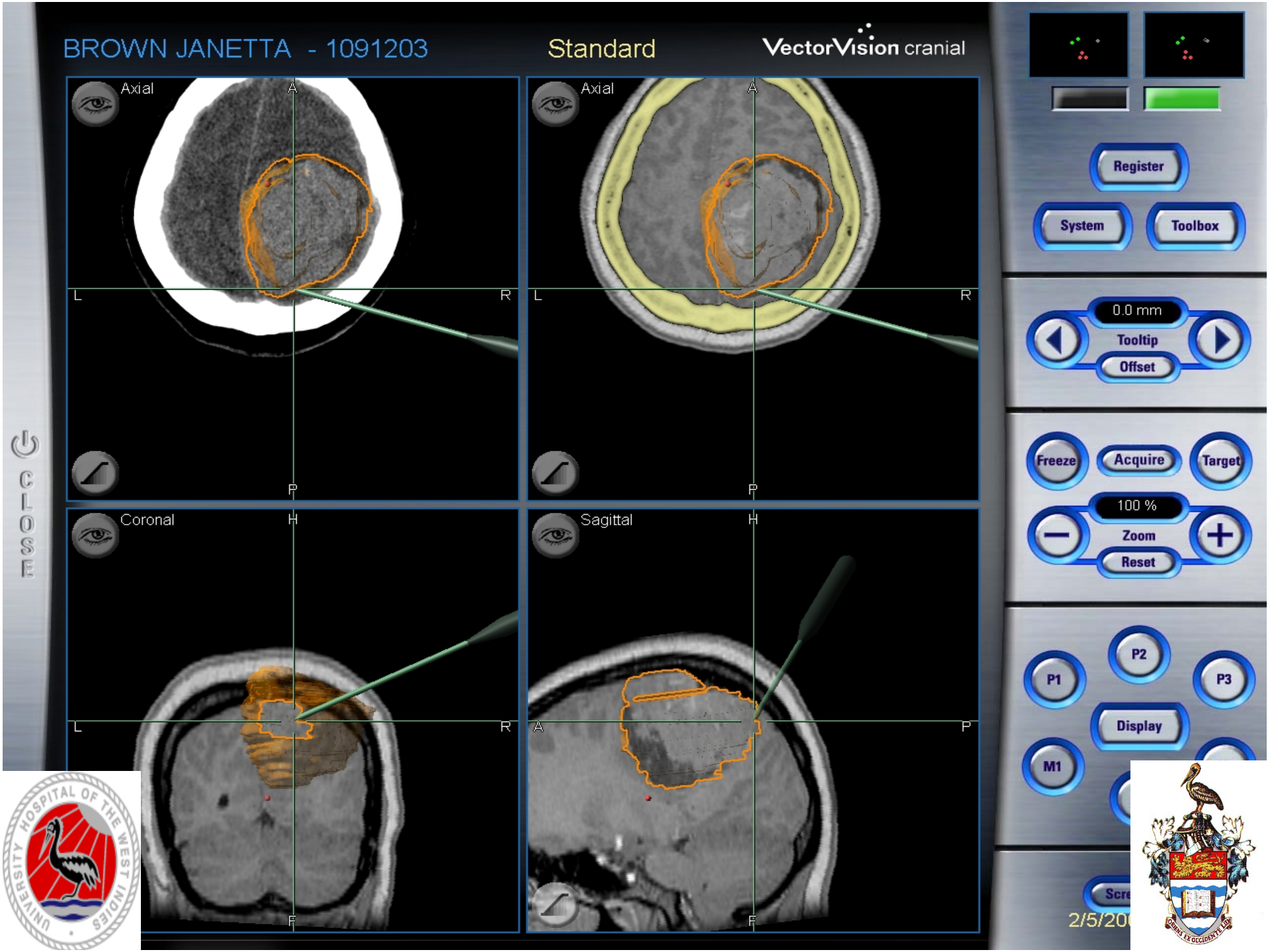
GPS Technology, Sphere equated to part of the head



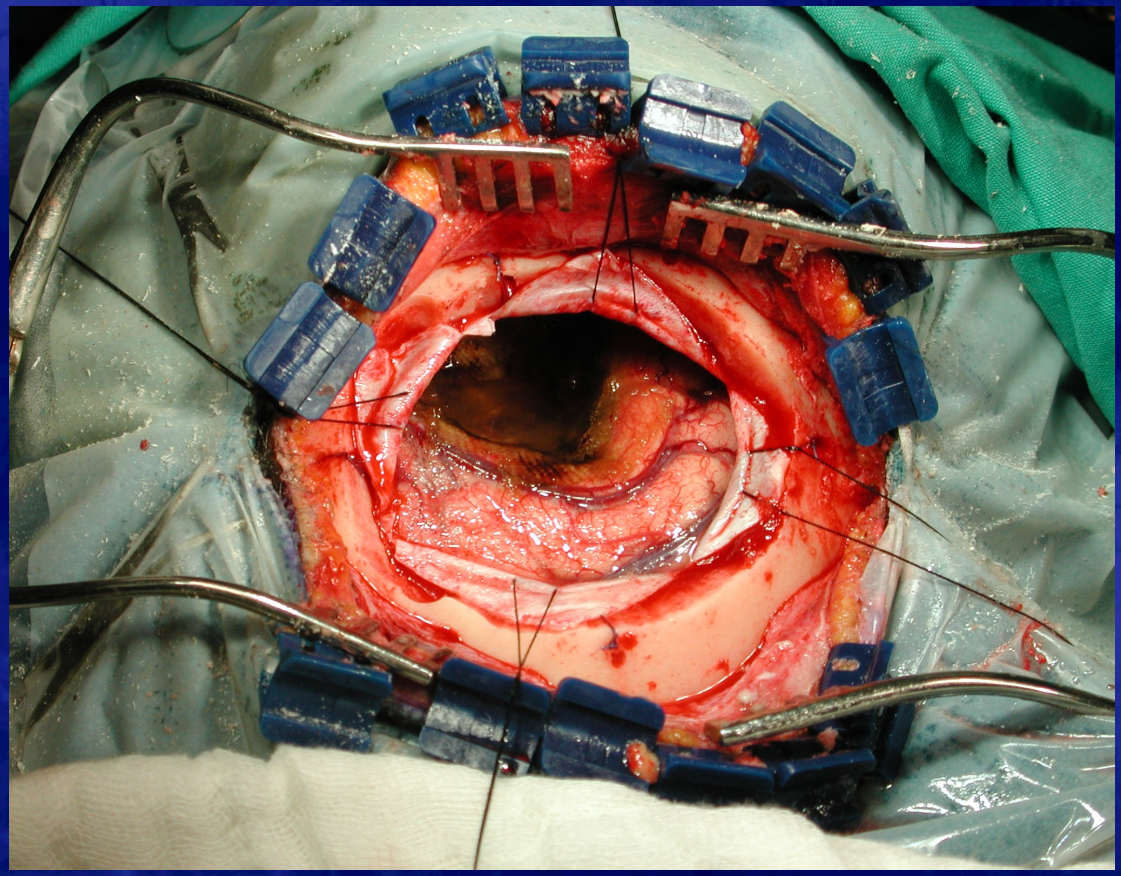
3-D Planning - Metastasis

Planning Room

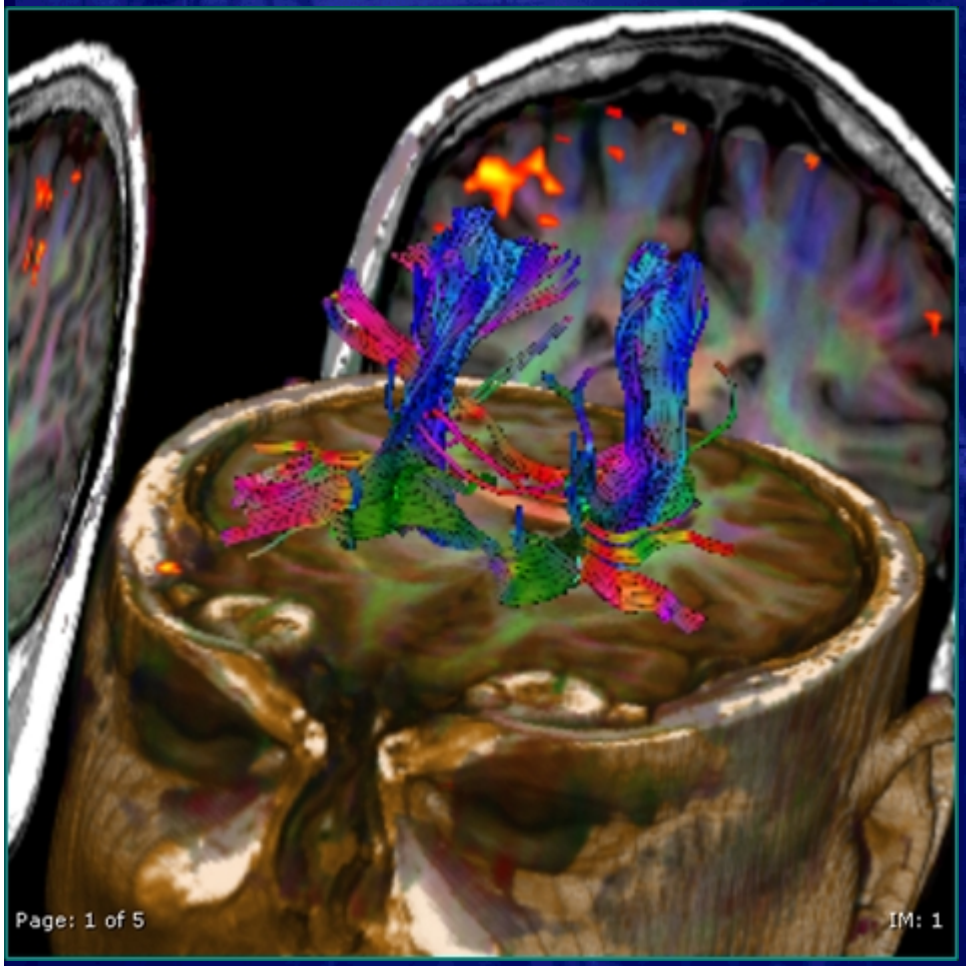
Neuronavigation

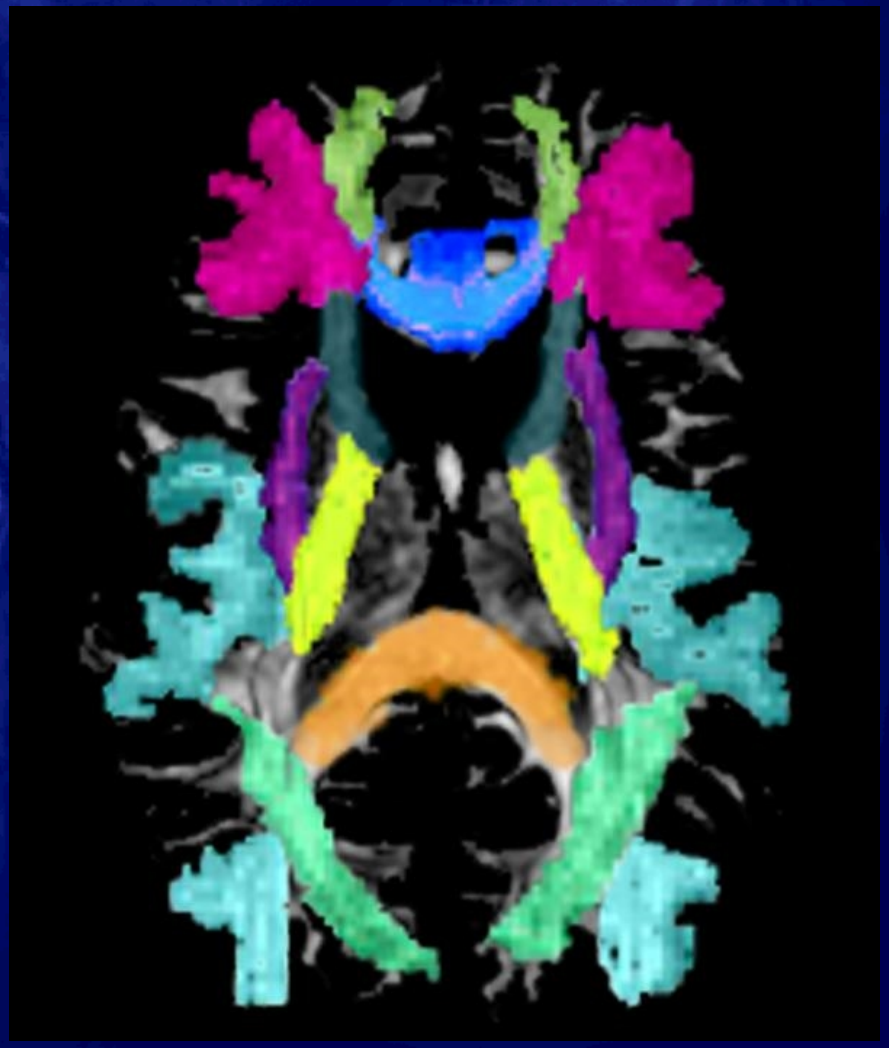

BROWN JANETTA - 1091203
Standard
VectorVision cranial
Axial
A
L
R
P
Axial
A
L
R
P
Coronal
H
L
R
F
Sagittal
H
A
P
F
CLOSE
Register
System
Toolbox
0.0 mm
Tooltip
Offset
Freeze
Acquire
Target
100 %
Zoom
Reset
P1
P2
P3
Display
M1

Less exposure
Linear incision

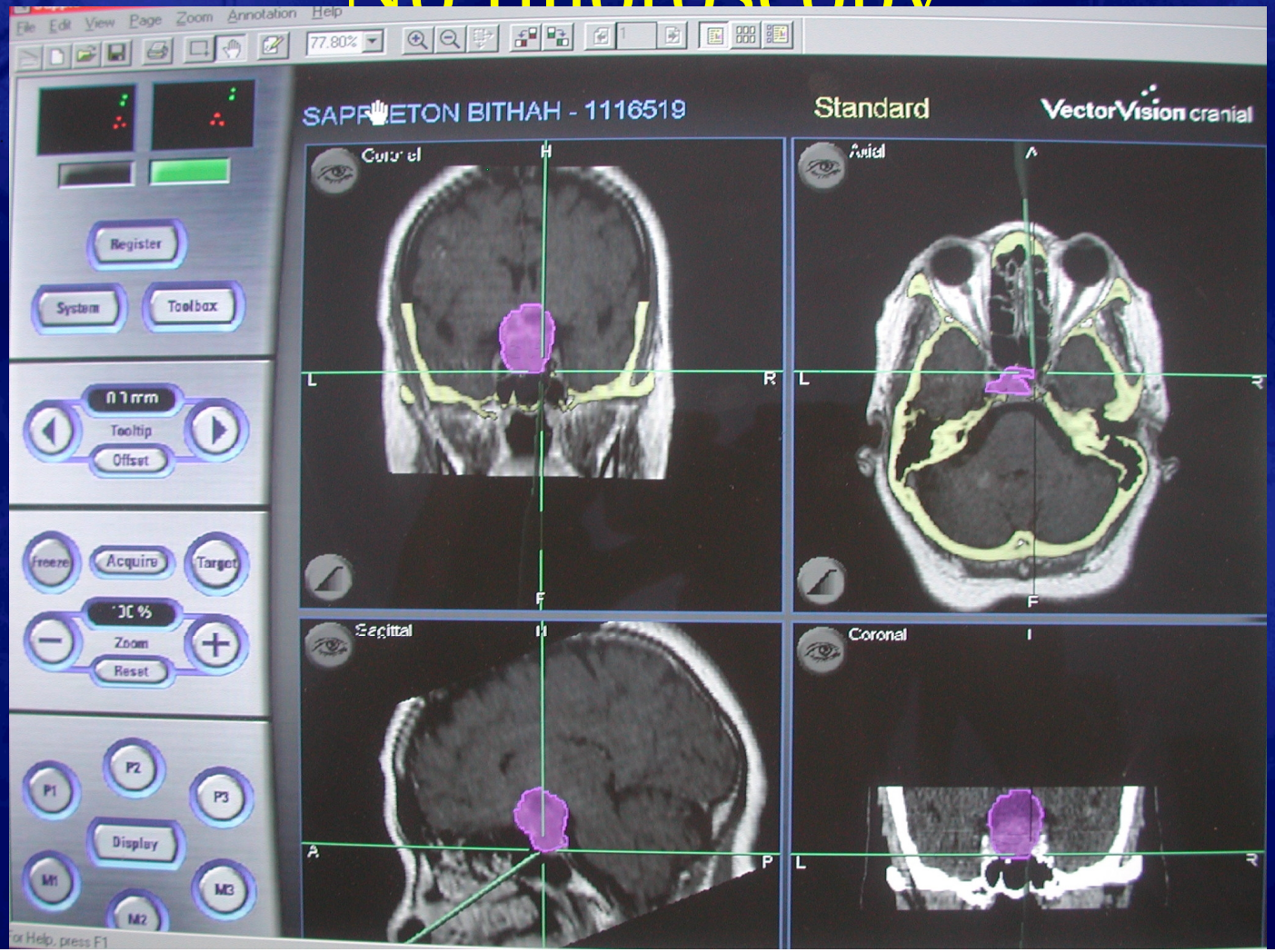


Diffusion Tensor Imaging





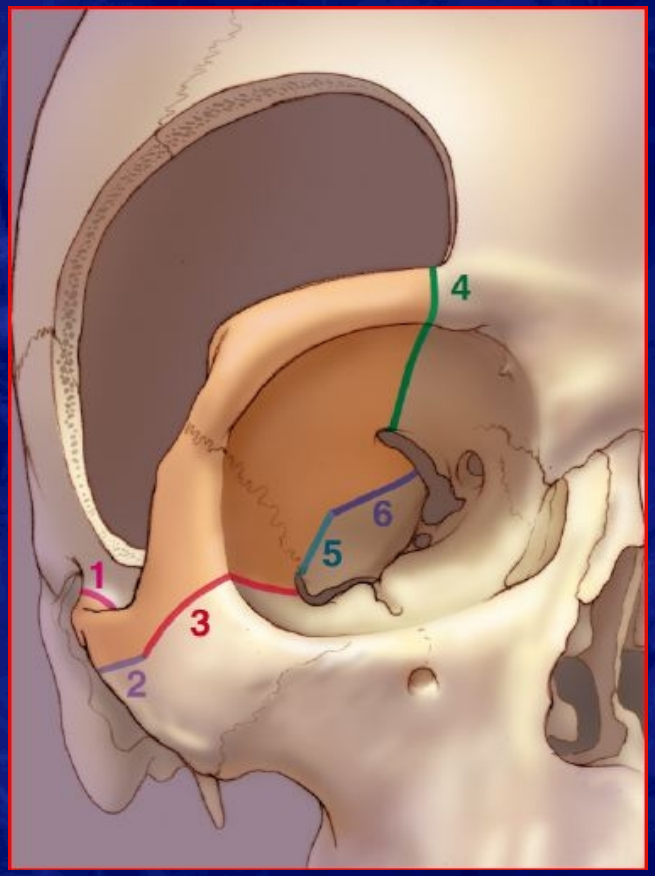
Neuroendocrine tumour
Pituitary Adenoma
No fluoroscopy

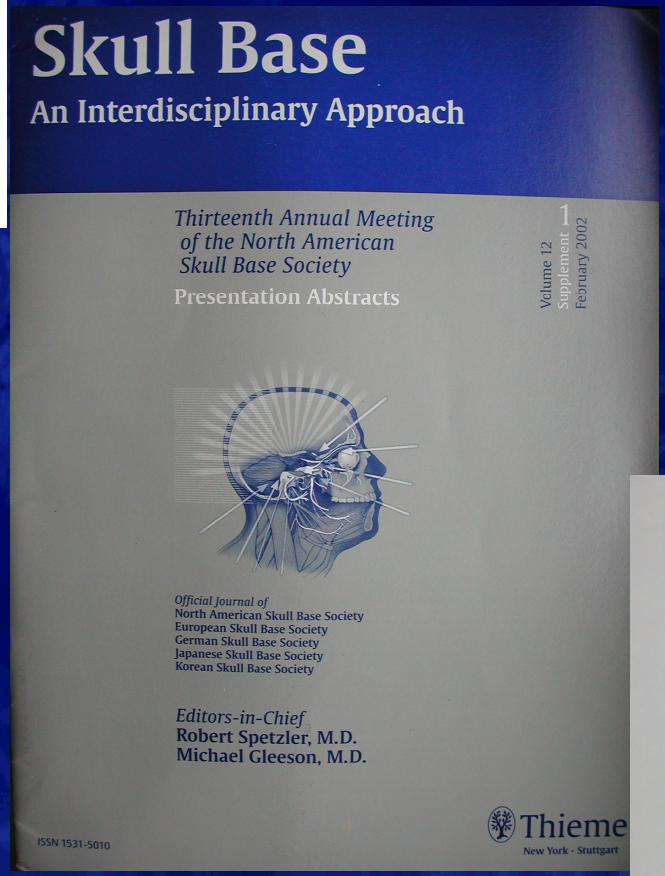


Open surgery

- LES Exposure is not always possible
- Complex multi-compartment lesions need open techniques

Skull base approaches
Orbitozygomatic osteotomy





Outcome of the Orbitocranial Approach for the Repair of Ruptured Anterior Communicating Artery Aneurysms

Carl Bruce, MD (presenter), Michael Cusimano, MD, Fahreen Afzal, MD (Toronto, Canada)

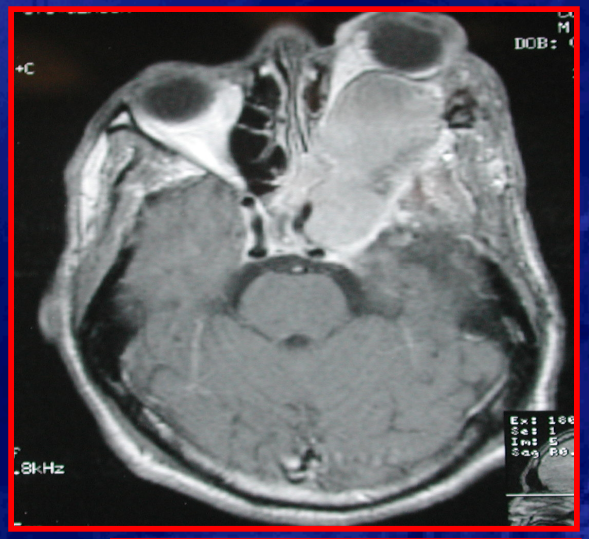
Introduction: The orbitocranial approach (OC) is ideal for surgery of lesions affecting the skull base. We compare the use of this approach with the pterional approach for ruptured anterior communicating artery aneurysm.

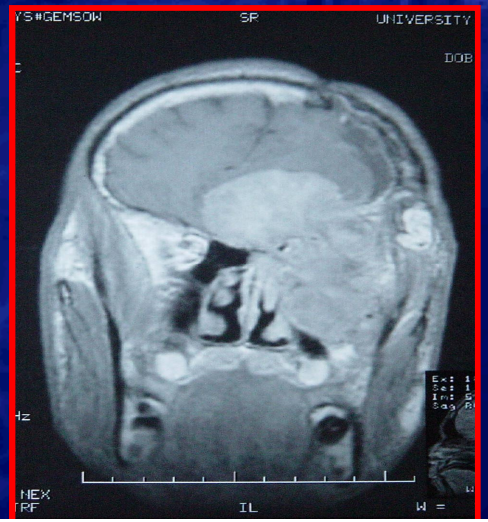
Methods: Thirty patients with a median age of 63 years were operated on via the OC approach; the median Hunt-Hess was 3. Seventy-eight patients with a median age of 55 years were operated on via a pterional approach; the median Hunt-Hess was 2.

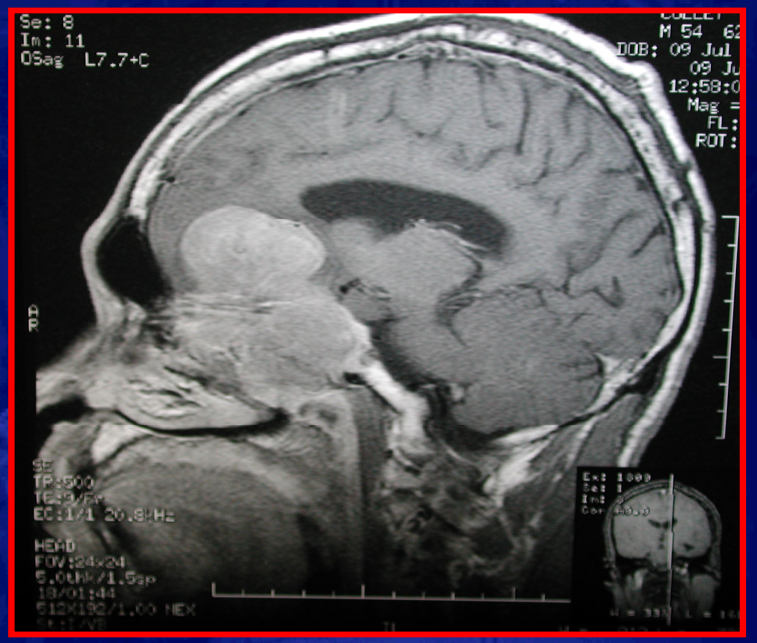
Results: Intra-operative rupture occurred in 30% of patients in the OC group and in 45% in the pterional group. Gyrus rectus resection was 6.7% in OC approach and 35.9% in the pterional group. More cognitive deficits were seen in the pterional patients (59.3%) and 23.3% in the OC patients. Median Glasgow outcome score was 4 and mortality 13% in both groups.

Conclusion: The orbitocranial approach to ruptured ACA aneurysms is associated with excellent outcome equivalent to or better than the traditional pterional approach.

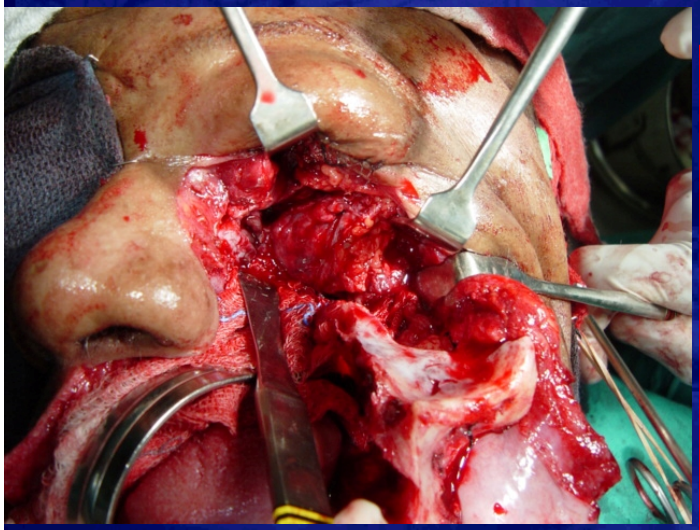
65yrs IDDM multicompartment tumour

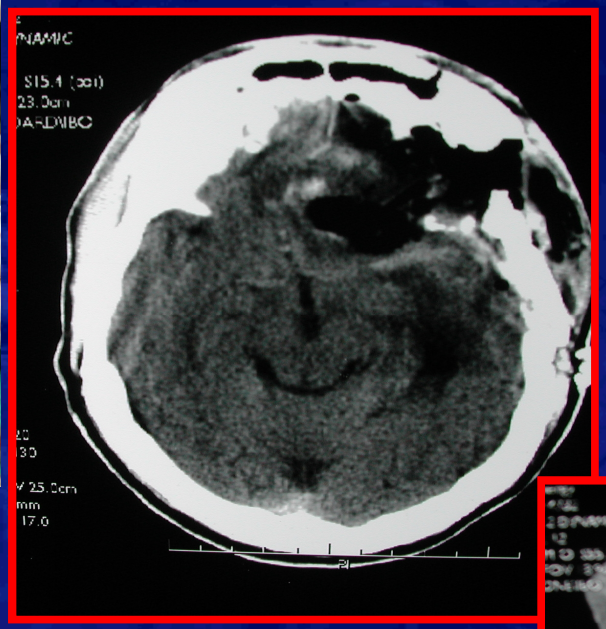


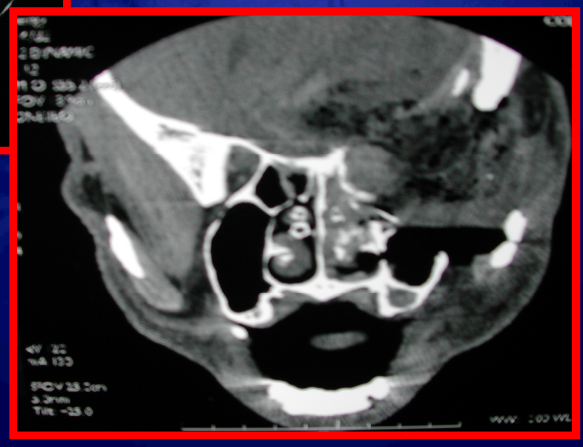




Unifrontal/Frontotemporal Craniotomy Orbitozygomatic/Maxillectomy







New Technological approaches to Old Clival Problems

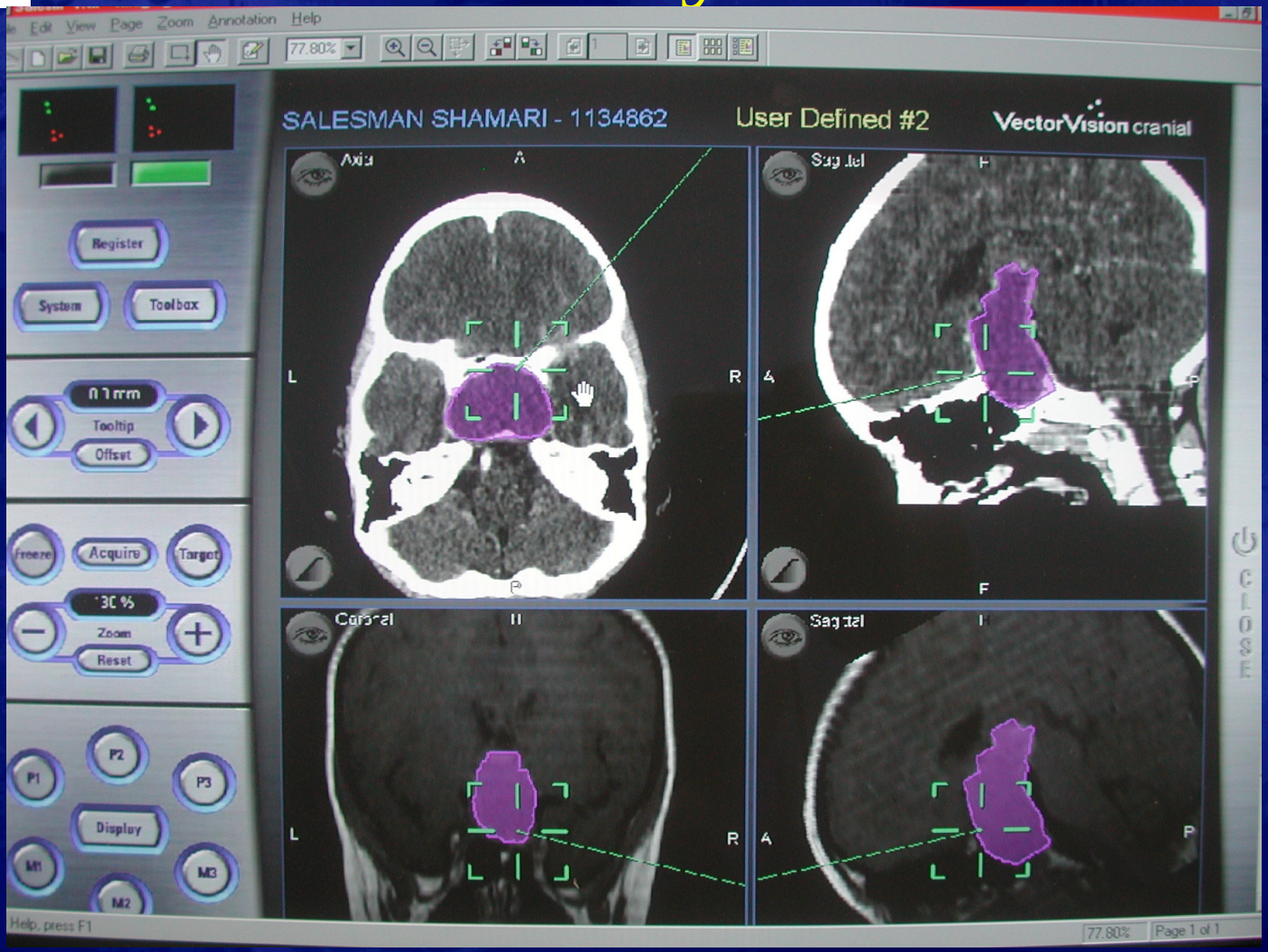
September 25, 2013

Carl Bruce
Peter Johnson
Nickola Nelson
Jacqueline Jaggon
Guendra Char

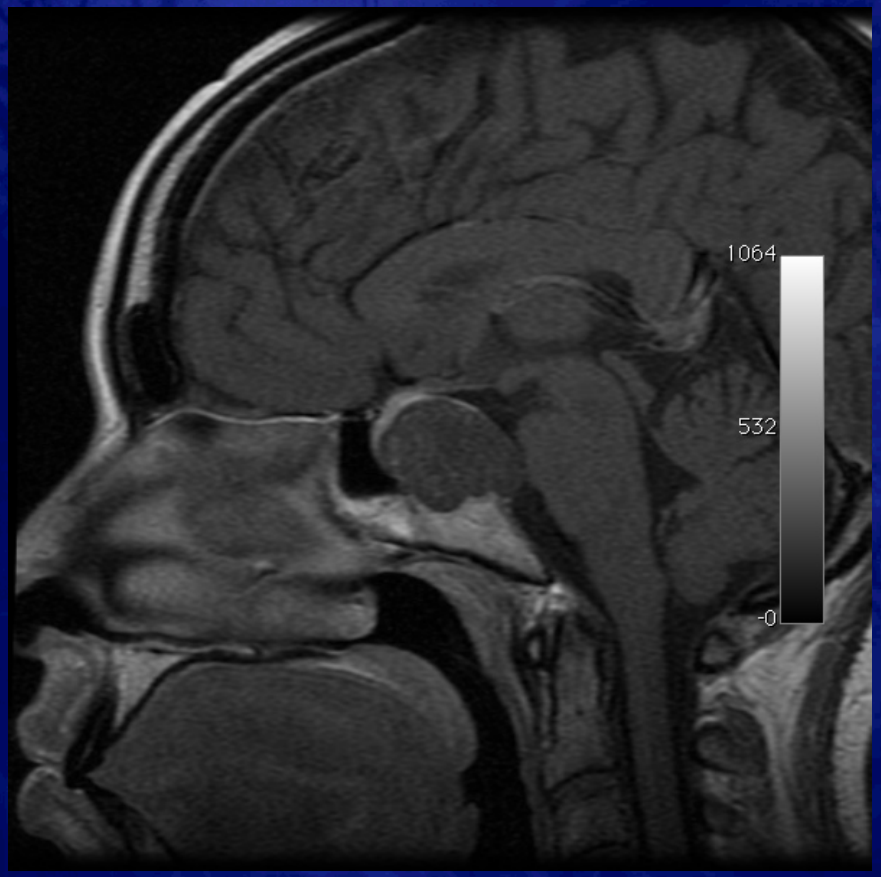
&

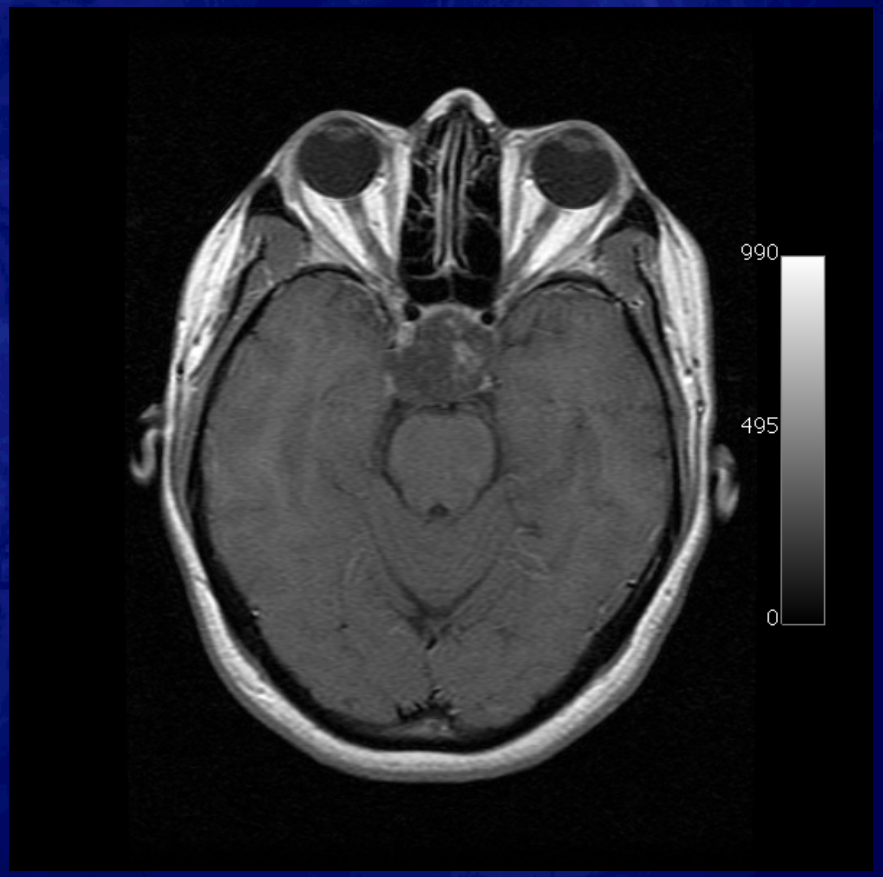
Division of Neurosurgery
Division of ENT
Section of Surgery
Department of Pathology
Section of Radiology, UWI and
University Hospital of the West Indies
Mona, St Andrew, Jamaica

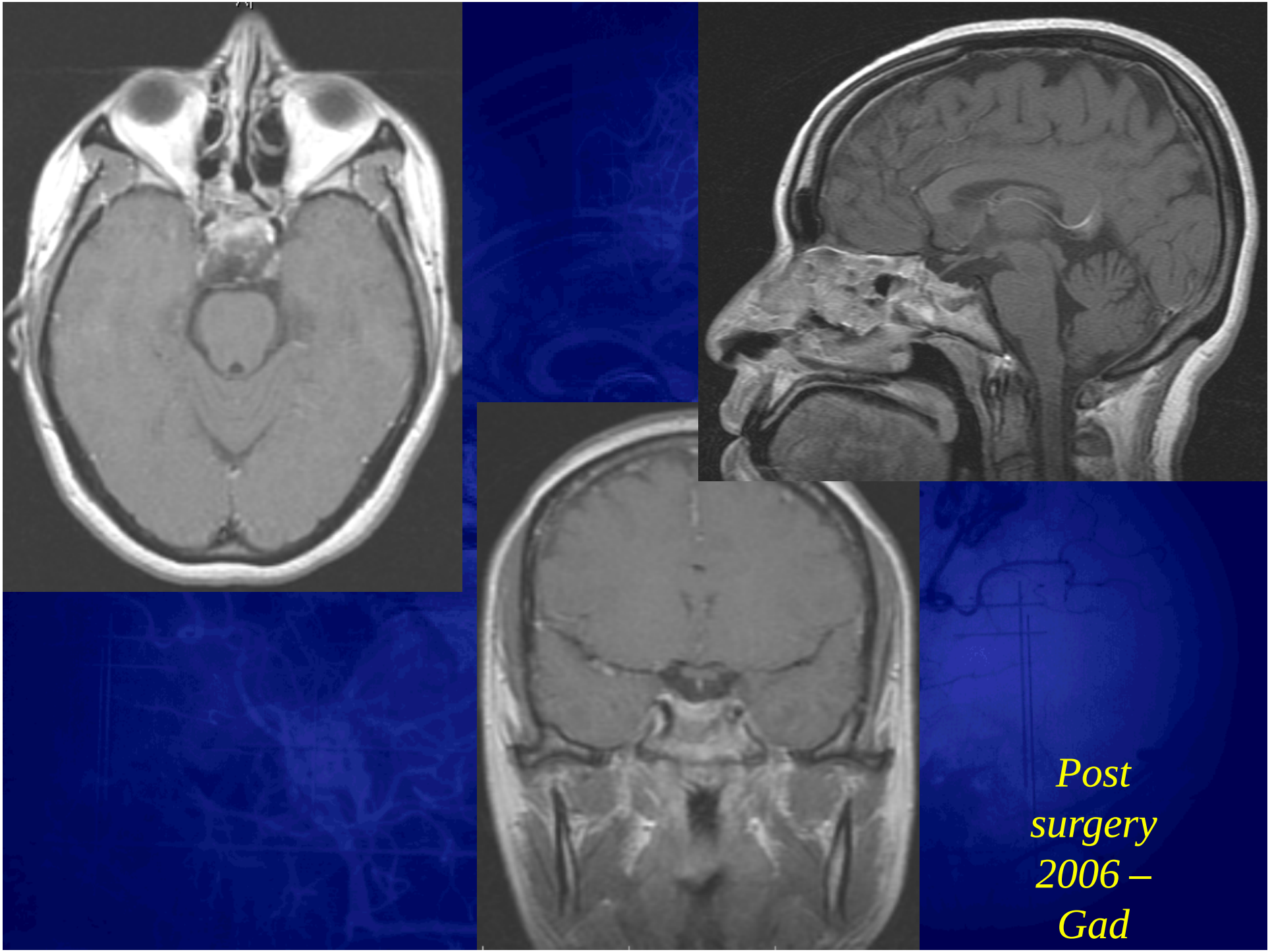
The Sellar region and beyond



T1 Gad 2005





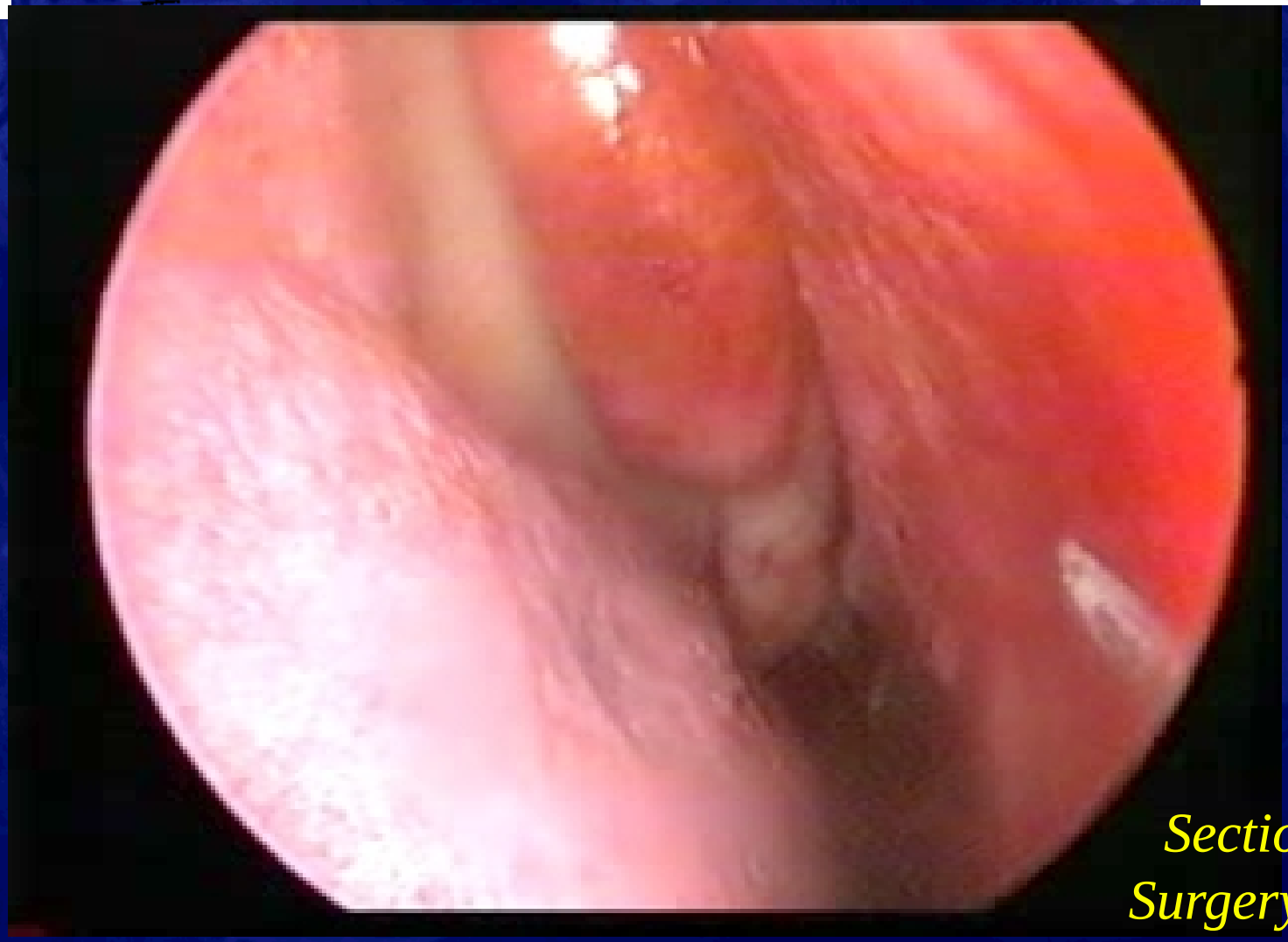

Post surgery 2006 – Gad

The Endoscopic Transbasal Approach

With OTOLARYNGOLOGIST

Versatility of Endoscopic approaches

Operative Setup



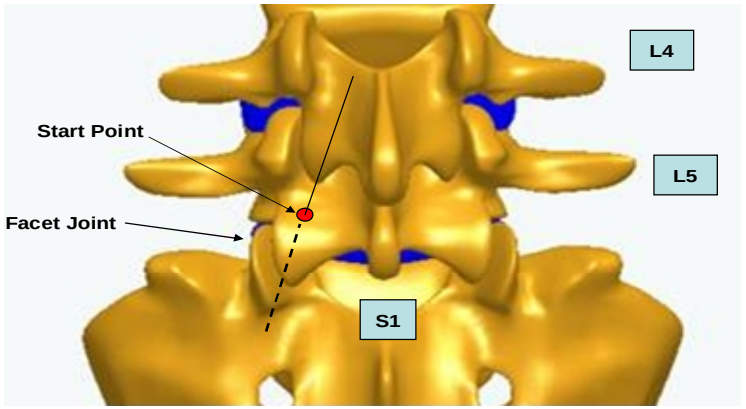
Section of Surgery UWI


Angled Light weight Drill
Diamond Attachment

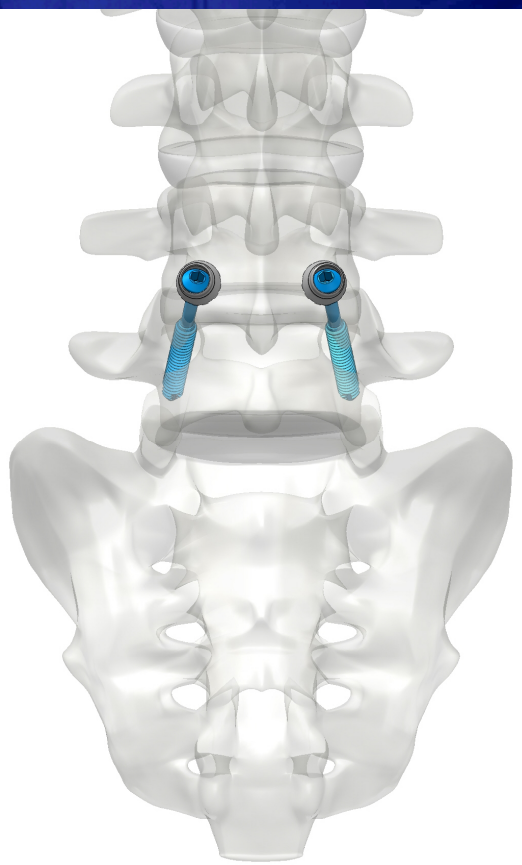

STORZ
Traditional taught our residents
Lateral to Medial technique

SLIF/ Percutaneous Pedicle screws

LES - Facet screws Lateral-Medial Inferior Trajectory 2007



FacetFuse – Fixes the joint



Medial to lateral Inf

Medio-lateral Cortical

51/F LBP R. Leg pain

Intraop of Mediolateral

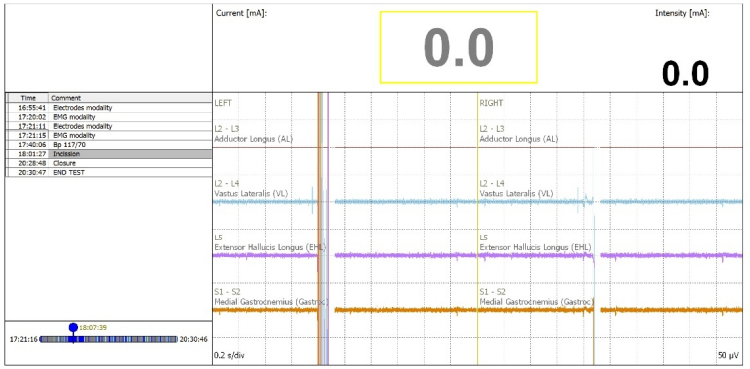
UHWI

Pat: Sylvia Peter
ID: 13399400

L2 - S1

EMG - PRINT SCREEN REPORT

Data Time: 07/26/2013 06:07
Print Time: 11/06/2013 10:07
Surgeon: Carl Bruce



NOTES: Sharp Nerve root Irritation

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Post operative Radiographs

Team?

- Multidiciplinary
  - Neuroradiologist
  - Endocrinologist
  - Neuroanaesthetist
  - Internist
  - Neurosurgeon
    - Skull Base
  - Faciomaxillary surgeon
  - ENT Surgeon
  - Intensivist
  - Well rehearse support staff

Tools

- Drills
  - Craniotome
    - Craniotomy
  - Osteotomy saws
    - Reciprocating saw
      - Osteotomies
    - Sagittal saw
      - Harvest iliac crest
      - Split calvarial graft
    - High Torque handpiece
      - miniplating
  - Integrated foot pedal/DISS
    - Simplifies the operating room

Summary

- A subspeciality of less exposure surgery is evolving with new frontiers for our most challenging patients
- Discretionary Efforts is needed – It will requires engagement all levels of staff
- Ethics and Compliance will be the foundation of its success and needs to be the NORM
- Our teams have to be Committed Team to the cause

IGS Course, Colombia
Sharing of thoughts and ideas

14th Caribbean Neurosciences Symposium

January 28th – 31, 2016

- *Call for Papers – Closing date December 1st, 2014*

- **Neurosurgery, Trauma, Spine & Critical Care**
- **Orthopaedics**
- **Plastic and Reconstructive surgery**
- **Ethics**

- **Montego Bay Convention Centre**
- **Half Moon Resort and Spa**
- **Montego Bay, Jamaica**

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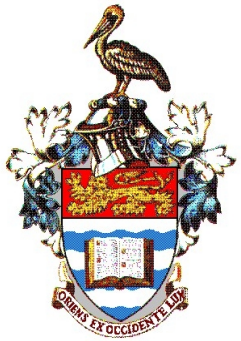

THANK YOU

www.uwicans.com

uwicans@yahoo.com

THE VESTIBULAR SYSTEM

- The vestibular system is responsible for maintaining posture, balance and spatial orientation.
- Part of the system is located in the inner ear. It also includes the vestibulocochlear nerve (the eighth cranial nerve) and
- certain parts of the brain that interpret the information the vestibulocochlear nerve receives.