30198:
Experience of Transnasal Pituitary Surgery In Nigeria, Sub-Saharan Africa

Kanu OO\textsuperscript{1,2}, Bankole OB\textsuperscript{1,2}, Ojo OA\textsuperscript{2}, Olatosi JO\textsuperscript{1,2}, Dawang DY\textsuperscript{2}, Yusuf AS\textsuperscript{3}, Morgan E\textsuperscript{2}, Adesida A\textsuperscript{1,2}

\textsuperscript{1}College of Medicine, University of Lagos
\textsuperscript{2}Lagos University Teaching Hospital, Lagos
\textsuperscript{3}University of Ilorin Teaching Hospital, Ilorin
DISCLOSURES

NONE
Background

- Pituitary adenoma is a benign tumor that occurs in the endocrine center pituitary gland.
- Pituitary adenomas are the third most common intracranial neoplasm with an incidence of pituitary adenoma is about 1 to 7 per 100,000, accounting for 10%–25% of intracranial neoplasms and a prevalence of 16.9% in autopsy studies.
- In recent years, with the development of imaging technologies, the early diagnosis rate of pituitary adenoma has obviously improved.
- This is far from reality in resource poor countries due to either poverty or limited availability of these technologies.
- Treatment modalities for pituitary adenomas include drug control, surgery, and radiation therapy.
- Surgical resection is the first choice for radical pituitary adenoma.
- Transsphenoidal route is an effective and the preferred surgical approach for patients with pituitary adenomas.
- It is not associated with high rates of major complications and is safe when performed by experienced surgeons.
- Transnasal surgery started in our center in Feb 2009.
Methodology

- Prospective study February 2009 to January 2017
- Socio demographics, clinical features, radiologic, hormonal and CVF documented.
- Preoperative pituitary endocrine profile data were collected, (follicle-stimulating hormone, thyroid stimulating hormone, T3, T4, cortisol, adrenocorticotropic hormone, Growth Hormone and prolactin levels).
- Approach to the sellar based on each of the three surgeons (microscopic / endoscopic; paraseptal/ purely endonasal), Outcome and complications were documented
- Postoperative characteristics assessed include visual acuity, visual fields, endocrine function, radiologic evidence of resection, length of hospital stay.
- Postoperative complications assessed include syndrome of inappropriate antidiuretic hormone secretion (SIADH), diabetes insipidus (DI), cranial nerve palsy, ICA artery damage, CSF leak, and mode of treatment, headache, epistaxis, sinusitis, visual complications, pneumocephalus, meningitis, panhypopituitarism and death
- Analysis done using SPSS version 20
- Pearson chi square and Fisher’s exact test significance set at 0.05
Equipment Set up

- Microscope
- Endoscope Tower
- Sinus Endoscopes (0°, 30°, 45°, 70°)
- Microdebrider
- Endoscope Irrigation system
- Micro instruments
- Power Drill
Results

- Total Number of patients:
  - 88 (92 procedures)
  - M:F Ratio: 2.2:1
- Age range 19 to 72yrs
- Duration of symptoms 1-8yrs
  - (15.8% <1 year; 55.8% 1 – 5 years; 27.4% > 5yrs)
- The major presenting features were visual impairment or blindness, headaches, infertility. Altered sensorium and apoplexy.
- Diagnosis
  - Imaging Modality: CT Scan / MRI
  - Hormonal Assay
- 90% of tumors were >3cm
- Procedures
  - Fifty six patients (63.6%) underwent microscopic resection
  - 32 (36.4%) patients underwent purely endoscopic procedures
- Resection Rate:
  - Gross Total Resection (GTR) in 70.5%;
  - Subtotal resection (STR) in 23.9%;
  - Partial and undetermined in 5.6%
- Length of Stay: 5 -39 days (Mean 8.7 days)
  - One patient stayed for 39 days before discharge
RESULTS - DEMOGRAPHICS

age distribution.

Clinical Presentation

Frequency of major symptoms
Results

● Remission Rate:
  - Vision improved in 76.1%;
  - No change in 14.8%;
  - Visual Deterioration in or death in 9.1%,
  - 100% (3/3) remission in acromegaly;
  - 66.7% (2/3) in Cushing’s;
  - 93.3% (14/15) for prolactinomas

● There was no significant difference in the post-operative complication profile of microscopic and endoscopic approaches (P<0.001)

● Complications:
  - Transient Diabetes Insipidus: 20.5%;
  - Transient CSF leaks: 5.7%;
  - Visual Deterioration: 3.4%;
  - Residual tumor haemorrhage: 3.4%;
  - Panhypopituitarism: 1.1%;
  - Pneumocephalus: 1.1%;
  - death 9% (Tension Pneumocephalus, Massive SAH, Anaesthesia related complications, pulmonary embolism)
Pre –op

I year post op
DISCUSSION

- Published literature suggest the use of transsphenoidal surgery as a first-line treatment for pituitary tumors and endoscopic transsphenoidal surgery as the first line treatment modality for patients with large and giant pituitary adenomas, other than prolactinomas.
- The pattern of surgery though influenced by each surgeons expertise shows that large and giant adenomas are better resected with Endoscopic approach.
- The goal of surgery is surgical decompression of neural structures, especially optic apparatus, and control of disease progression.
- Though GTR without recurrence achieves this outcome, subtotal resection has shown equally satisfactory clinical outcomes and this is evident in some of our cases with subtotal resection.

Conclusion

- Transnasal approach is a safe and effective treatment for pituitary and other parasellar tumours.
- Considerable experience and expertise have become available in Nigeria to serve the West African region.
- Surgical complications in our series have been minimized after the first year.
- The adoption of a team approach in perioperative care has helped improve our outcome.