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## TABLE OF CONTENT

COPYRIGHT .....	i
TABLE OF CONTENTS .....	ii
EDITORIAL BOARD .....	iii
ASSOCIATION OF RESIDENT DOCTORS EXECUTIVE .....	iv
EDITORIAL NOTES .....	v
AUTHORS INFORMATION .....	vi
EDITORIALS - ARTS MEDICINE, ANY JUSTIFICATION? .....	229
<b>REVIEW ARTICLES</b>	
NEUROPATHIC PAIN REVIEW: GLOBAL YEAR AGAINST NEUROPATHIC PAIN. <b>Nnaji C.</b> .....	231
LITIGATION AND THE ANAESTHETIST <b>Dr Buowari Y.O.</b> .....	236
<b>ORIGINAL ARTICLES</b>	
RHINOLOGIC SURGERIES IN THE UNIVERSITY OF PORT HARCOURT TEACHING HOSPITAL: A 5 YEARS RETROSPECTIVE ANALYSIS. <b>Onotai L.O, Mbalaso O.C,</b> .....	241
THE PRINCIPAL CAUSES OF HOSPITALIZATION AMONGST THE ELDERLY OVER A FIVE YEAR PERIOD (2002-2006) IN A TERTIARY HEALTH FACILITY IN SOUTHERN NIGERIA. <b>Amadi E., Asikimabo-Ofori S., Bellgam H.I, Ngeri B, Sekibo I.</b> .....	246
ASSESSMENT OF PATTERN AND INJURY SEVERITY OF PATIENTS WITH MAXILLOFACIAL INJURIES DUE TO PHYSICAL AGGRESSION IN A NIGERIAN TEACHING HOSPITAL: A RETROSPECTIVE SURVEY <b>Akinbami B.O.,</b> .....	252
PREMATURITY IN NEWBORNS IN URBAN AND RURAL GENERAL HOSPITALS IN LAGOS STATE: A COMPARATIVE STUDY <b>Balogun M, Pepple E F</b> .....	258
<b>CASE REPORTS</b>	
NEGLECTED HUGE RECTAL PROLAPSE IN IMMUNOCONPROMISED: the place for Thiersch. <b>Igwe P.O., Dodiya-Manuel A., Kalu G.A.</b> .....	265
APPENDIX I .....	269
APPENDIX II .....	270

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## EDITORIALS

### ARTS MEDICINE, ANY JUSTIFICATION?

Ekechi A.

*Deputy editor, Gazette of medicine*

#### Introduction

Medicine is regarded an art as well as science. So, why is Arts Medicine necessary? It is defined as an integration of arts into medicine in order to promote health and also enhance the life of patients, their relatives, visitors and employees. Performing Arts medicine is an emerging branch of medicine that focuses on the special care of performing artists in relation to their occupation.<sup>1</sup> It may be regarded as a form of Arts medicine or Occupational medicine or an entirely different specialty.

#### The Scope of Arts

Arts is defined as expression or application of human creative skills and imagination; which could be expressed in different visual forms such as painting, sculpture or poetry or in physical activity such as dance and drama or in auditory form such as music and songs. The scope of arts includes the visual arts, performing arts, literary arts, creative arts and fine arts.

These further have subdivisions and the scope is further expanding. Arts serve as a way of self expression to the world, expressing one's imagination including political ideas, communication, entertainment and it can also serve as a ritualistic or spiritual function

#### Medicine as an Art

Medicine is as old as humanity, so is art. Medicine is also regarded as an art. Taking a history from a patient, physical examination, surgical procedures and counseling of patient and clients require mastery of artistic skills, not learnt in any formal art class but in medical practice.

In ancient times, depiction of the effects of different ailments and even when healers were at work could be seen on the walls of caves and buildings. Even today, fiction, films, poetry and drama depict health matters as humanity tends to understand them, broadening the human wisdom.

#### Performing Arts Medicine

Performing arts refers to physical activity done in front of an audience either for entertainment or

education. It includes music, dance, singing and acting .The entertainment industry is one that employs a lot of persons particularly in the Western world and is also faced with its own health peculiarities, has given to rise to the need for special attention.

Performing Arts Medicine has spanned over thirty years in the United States of America and United Kingdom. Alice Brandfonbrener , who sadly passed on in May 31 2014 was regarded as the forerunner of Performing arts medicine. She was a physician that recognized the special needs of performing artists and founded the Medical Program for Performing Arts Medicine in 1985 in the Northwestern University school of medicine in Chicago. She also co-authored the first Performing Arts Medicine text book<sup>2</sup>.

Performing Arts medicine has a multidisciplinary approach to health care including Internal Medicine, Dentistry, Orthopedics, Neurology and Psychiatry. There also an association of Performing Arts Medical Association open to health care workers interested in the care of performing artists. The group renders health advice to artists and also helps in proper referral to physicians and surgeons when necessary.

#### Arts Medicine-Justification

The common factor which links art to medicine is humanity, both have been in existence since man and each serves a useful function to man. There is no doubt arts have always been part of medicine, but why the emphasis in modern day medicine? According to Iva Fattorini, an international health physician and chairman in the Global Arts and Medicine institute at Cleaveland Clinic, modern day medicine has lost the connection between healing and the power of the mind due to advancement in technology, thus there is the need to re-integrate arts into medicine which will be of great benefit to the patient<sup>3</sup>.

Visual arts display helps in provoking our emotions; it also helps to appreciate health care given in the past and present. It helps in teaching medical students and relaying of information in a universal form The use of



insinuator, who are some sort of dramatists have aided clinical medicine. In literature such as poetry and prose, medical ailments have been described in ways a layman can understand; take for instance the poem 'The Sick foot' by Albert Kayper-Mensah helps us to understand the scourge of polio in a humorous way<sup>4</sup>. Recitation of poetry with focus on various health issues on special days such as World Health day as done by members of Seaview Poetry Club on radio in Port Harcourt has helped in appreciation of diseases and it has helped in health advocacy. The Oxford Handbook of Clinical Medicine uses both visual arts and poetry to aid in learning of medicine. It depicts art works from famous creative and literary artists<sup>5</sup>. The film industry has also helped in understanding of various diseases and how they affect humanity

### **Arts Medicine – Institutions**

Arts medicine has been given special attention in some health institutions in Western world such as Cleveland Clinic and Stanford Centre for Bioethics, Stanford University<sup>3</sup>. The benefits are to enhance of the health of the patients through the arts of healing, promote the well being of relatives, friends, visitors and even the employees through arts. There is also research into how arts and culture affect the quality of living.

Arts medicine has being offered as a course in the University of New South Wales in the UK since from 2012<sup>6</sup>. The aim is allow students pursue their interests in arts and social sciences while pursuing a medical degree. It also helps to broaden their knowledge of both arts and medicine.

### **Arts medicine in Nigeria**

Arts medicine is not given any special focus in Nigeria health institutions. It is yet to be offered as a separate course in medical education, although in first year of most medical schools courses in humanities are studied. The display of art works can be seen in both private and government owned health care facilities either in form of paintings or sculpture. One of the popular art works is that which is seen on the premises of the Lagos State University Teaching Hospital; the sculpture of surgeons performing a surgical procedure on a patient.

Television sets and cable network are usually provided by hospital authorities in the various wards. Patients are also allowed to have small portable radios from which they can listen to music. However there are no planned settings incorporating arts into medical care nor are there

studies carried out in most health establishments on the effect of arts on the health of the patient.

Nollywood and the entertainment industry had suffered loss of some its members due to various health condition. Performing Arts medicine is yet to develop in Nigeria.

### **Conclusion**

The saying that fine art is good medicine is true thus Arts medicine and Performing Arts medicine should be explored and its benefits weighed in view of the Nigerian population.

### **References**

1. [www.oxforddictionaries.com](http://www.oxforddictionaries.com) 08/12/2014, 9.43pm
2. [www.medscape.com/Alice Brandfonbrener](http://www.medscape.com/Alice_Brandfonbrener) 08/12/2014 8.19pm
3. [www.clevelandclinic.org](http://www.clevelandclinic.org) 08/12/2014 7.45pm
4. Fraser R. Reading African Poetry; An Introduction for Schools, Collins; 1975,84-85
5. Murray et al; Oxford Handbook of Clinical Medicine, 8th Edition, Oxford University Press, 2010,2-3,316-317
6. [http://medprogram.med.unsw.edu.au/art\\_medicine](http://medprogram.med.unsw.edu.au/art_medicine) 09/12/2014 2.30am

# NEUROPATHIC PAIN REVIEW: GLOBAL YEAR AGAINST NEUROPATHIC PAIN.

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## **Abstract**

*Neuropathic pain results from damage or dysfunction in the peripheral or central nervous system. It is clinically divided into peripheral and central neuropathic pain. The pain is often triggered by an injury, but this injury may or may not involve actual damage to the nervous system. The pain frequently has burning, shooting, lancinating, or electric shock qualities; it can be spontaneous, continuous, paroxysmal, or evoked with some common features include tingling, pins and needles, and crawling sensations. Some of the aetiological causes are post herpetic neuralgia, phantom limb pain, stump pain, ischaemic neuropathy, antiretroviral agents, chemotherapy, alcohol, diabetic mellitus, uraemia, human immunodeficiency virus, stroke, spinal cord injury, and complex regional pain syndrome type I and II. Some assessment tools like Neuropathic Pain Questionnaire, Douleur Neuropathique en 4 questions, Leeds Assessment of Neuropathic symptoms and sign, and Pain Detect proves helpful in diagnosis. Patients can achieve some benefit from pharmacological agents like gabapentin, pregabalin, serotonin-noradrenaline receptor inhibitors, tricyclic antidepressant, topical lidocaine, tramadol and opioids and non-pharmacological methods like education, physiotherapy and psychotherapy.*

---

## **Introduction**

Pain is “an unpleasant sensory and emotional experience associated with tissue damage or described in terms of such damage<sup>1</sup>.” Some authors<sup>2</sup> have described **pain** as a conscious experience emerging from brain activity; and **nociception** as the neural processes of encoding noxious stimuli, which is necessary but may not be enough to produce pain<sup>3</sup>. It requires affective or emotional, behavioral and cognitive component to be perceived as pain<sup>1</sup>. Pain can be classified as nociceptive or neuropathic pain, amidst other classifications that exist in clinical practice<sup>3</sup>.

**Neuropathic pain** is defined as pain, which results from damage or dysfunction in the peripheral or central nervous system or somatosensory system<sup>3, 4</sup>. It is clinically divided into **peripheral and central neuropathic pain**<sup>3</sup>. The pain is often triggered by an injury, but this injury may or may not involve actual damage to the nervous system. Nerves can be infiltrated or compressed by tumors, strangulated by scar tissue, or inflamed by infection<sup>3</sup>. It frequently has burning, shooting, lancinating, or electric shock qualities and can be spontaneous, continuous, paroxysmal, or evoked<sup>3,5,6</sup>.

Some of its common features include tingling, pins and needles, and crawling sensations<sup>3,5,6</sup>.

Persistent allodynia<sup>1,3</sup>, pain resulting from a non-painful stimulus such as a light touch, is also a common characteristic of neuropathic pain. The pain may persist for months or years beyond the apparent healing of any damaged tissues, thus no longer signals ongoing or impending injury, but that of a malfunctioning system. Neuropathic pain is frequently chronic, and tends to have a less robust response to treatment with opioids, but may respond well to other drugs such as anti-seizure and antidepressant medications<sup>5,6</sup>.

In some conditions the neuropathic pain appears to be caused by a complex mixture of nociceptive and neuropathic factors. An initial nervous system dysfunction or injury may trigger the neural release of inflammatory mediators and subsequent neurogenic inflammation. For example, myofascial pain is probably secondary to nociceptive input from the muscles, but the abnormal muscle activity may be the result of neuropathic conditions. This will respond to combination of opioids and antidepressants or anticonvulsants<sup>3,5,6</sup>.

Neuropathic pain impairs patients' overall quality of life, including important aspects of physical and emotional functions like mobility and ability to work<sup>7, 8, 9</sup>. Its treatment is difficult, generating substantial cost to the society<sup>10, 11, 12</sup>. Usually, neuropathic pain is not fully reversible, but partial improvement is often possible with proper treatment, and some authors have recorded about 50% success rate in the management<sup>7,12,13</sup>.

### Pathophysiology of neuropathic pain

The processing of neuropathic pain depends on whether it is a peripheral or central type of neuropathic pain<sup>3, 6</sup>.

**Peripheral neuropathic pain** may result from damage to the unmyelinated C or myelinated A $\delta$  peripheral neurons or nerve fibres (peripheral nervous system) following nerve compression, infiltration by tumour, metabolic changes, trauma or surgery. These causes an increased sodium and calcium ions expression and peripheral sensitization, resulting in spontaneous discharge, reduced threshold and enhanced expression of pain<sup>3, 5, 14</sup>. However, in **central neuropathic pain**, there is damage to the neurons in the spinal cord or brain (central nervous system), thus affecting the glutamate-N-methyl-D-aspartate (Glutamate-NMDA) receptors, descending inhibitory serotonergic and noradrenergic pathways, causing central sensitization of the neurons, resulting in increased neuronal activity, descending inhibitory serotonergic and noradrenergic pathway dysfunctions<sup>3,5,14</sup>.

The processing of pain includes certain mechanism<sup>15</sup>:

- Transduction
- Transmission
- Modulation
- Perception

**Transduction:** This is the process by which afferent nerve endings (nociceptors) participates in translating noxious stimuli (mechanical, chemical or thermal) into nociceptive impulses or action potential, by the help of specific sodium channels. Injury triggers the release of biochemical substances resulting in inflammation and stimulation of nociceptors. This generates pain impulse in the form of action potential<sup>15</sup>.

**Transmission:** This is the physiological process by which transduced and generated nociceptive impulses (action potential) are conducted to the dorsal horn of the spinal cord, and then along the sensory tracts to the brain. This occurs at the nerve fibres (A $\delta$  and C).

Nociceptive impulses travel along peripheral nerve fibres as action potentials (**peripheral transmission**) to the dorsal horn of the spinal cord, where they synapse with the second order neurons (**synaptic transmission**). The impulse at this point is subsequently transmitted through the neurons, which cross the spinal cord and ascend to the thalamus and branches to the brainstem nuclei (**central transmission**). The nociceptive impulses are then relayed to multiple areas of the brain including the somatosensory cortex, the insula, frontal lobes and limbic system. The somatosensory cortex is believed to be associated with the sensory aspects of pain, like the intensity and quality of pain, whereas the frontal cortex and limbic system are thought to be associated with the emotional responses to pain<sup>15</sup>.

**Modulation:** This is the physiological process of dampening or amplifying pain-related neural signals. Modulation takes place primarily in the dorsal horn of the spinal cord, but also elsewhere, with input from ascending and descending pathways. The signals can be amplified or dampened at various points in the pathway to facilitate or inhibit transmission, thereby enhancing or reducing the sensation of pain. The gate control theory is a popular model of pain modulation proposed by Melzack and Wall in 1965, later revised by Melzack and Casey in 1968. They proposed the existence of an endogenous ability to reduce or increase the degree of perceived pain through modulation of incoming impulses at a gate located in the dorsal horn of the spinal cord. The gate acts on signals from the ascending and descending systems and weighs all of the inputs. The integration of these inputs from sensory neurons, the segmental spinal cord level, and the brain, determines whether the gate will be opened or closed, either increasing or decreasing the intensity of the ascending pain signal<sup>2,15</sup>.

**Perception:** This refers to the subjective experience of pain that results from the interaction of transduction, transmission, modulation, and the psychological aspects of the individual. It is the process by which a noxious event is recognized as pain by a conscious person. Multiple areas of the brain are involved. There is no one location where perception occurs, although major defining components of pain are attributed to processes that take place in specific areas of the brain. Conscious perception of pain occurs when the signals are conveyed

to the brain, in particular the somatosensory region of the cerebral cortex<sup>2,15</sup>.

#### **Aetiology of neuropathic pain**

**Focal/multifocal lesions** – post herpetic neuralgia, phantom limb pain, post-traumatic neuralgia, stump pain, diabetic proximal mononeuropathy, ischaemic neuropathy, entrapment syndrome<sup>15,16</sup>.

**Polyneuropathies** – antiretroviral agents, chemotherapy, alcohol, heavy metal (thallium), metronidazole, isoniazid, diabetic mellitus, amyloid, vitamin B deficiencies, uraemia, human immunodeficiency virus<sup>15,16</sup>.

**Central nervous system lesions** – stroke, spinal cord injury, multiple sclerosis, syringomyelia<sup>15,16</sup>.

**Complex neuropathic disorders** – complex regional pain syndrome type I and II<sup>15,16</sup>.

#### **Clinical implications of neuropathic pain**

Some authors<sup>17, 18, 19</sup> acknowledged that pain has the capability of initiating a neuroendocrine reflex involving the stimulation of the sympathetic nervous system and release of plasma catecholamine, cortisol, aldosterone, adrenocorticotrophic and growth hormones, prolactin, endorphins and vasopressin, and this causes catabolism and renin-angiotensin system activation. Pain is also associated with some systemic manifestations, which includes: sleep disturbances, anxiety, fear, sense of unpleasantness or unease, sense of hopelessness or helplessness, depression, fatigue, distress, tachycardia, hypertension, increased peripheral vascular resistance, increased stroke volume, increased myocardial oxygen demand and consumption, myocardial ischaemia, altered regional blood flow due to sympathetic stimulation, arrhythmia, decreased blood flow to the viscera and skin<sup>18,19</sup>.

Some other manifestations are hypoventilation, hypercapnia, hypoxia, hyperventilation, hypocapnia, delayed gastric emptying, reduced intestinal motility and ileus, nausea/vomiting, decreased gastric acid secretion, decreased renal blood flow, decreased glomerular filtration, urinary retention, oligouria, reduced physical activity, immobility, impaired rehabilitation and functional outcome, muscle spasm, platelet activation and aggregation, increased fibrinogen and blood viscosity, reduced white blood cell activity, humoral activity, reticuloendothelia system activity, decreased

insulin production, reduced testosterone, release of vasopressin, release of aldosterone, renin and angiotensin, release of cortisol, release of glucagon, release of growth hormone, release of catecholamine, increased blood sugar, water retention, increased protein breakdown, sodium retention, increased metabolic rate, decreased body's physiological reserves, flushing, diaphoresis, increased cost of patient care<sup>17,18,19</sup>.

#### **Diagnosis**

- **Clinical features** – neuropathic pain may be burning, shooting, lancinating, or electric shock in qualities. It can also be spontaneous, continuous, paroxysmal, or evoked, with common features like tingling, pins and needles, crawling sensations and persistent allodynia<sup>6,16</sup>.
- **Assessment tools** – some tools that have been used in recent times to screen patients suspected to have neuropathic pain includes Neuropathic Pain Questionnaire (NPO), Douleur Neuropathique en 4 questions (DN4), Leeds Assessment of Neuropathic symptoms and sign (LANSS), and Pain Detect<sup>16</sup>.
- **Clinical assessment** – this is often achieved by using the three “L” of clinical assessment in pain management. (a) Listen to the patient describes the pain, its quality and character. (b) Locate the site of this pain, making a documentation of it by drawing, either by the patient or physician. (c) Look for any sensory abnormality, its distribution and pattern<sup>16</sup>.
- **Assessment of psychological comorbidity** – this is done by using the graded pain scales and measurement scales for anxiety, depression and non-specific clinical symptoms<sup>6,16</sup>.

#### **Pharmacological treatment**

International Association for the Study of Pain made some recommendation in 2010 for the treatment of neuropathic pain. This includes<sup>20</sup>:

- **First-line drugs**
  - Antidepressants with both norepinephrine and serotonin reuptake inhibition - serotonin-noradrenaline receptor inhibitors (duloxetine) and tricyclic antidepressants (amitriptyline).
  - Calcium channel  $\alpha 2$ - $\delta$  ligand - gabapentin, pregabalin
  - Topical lidocaine
  - Tramadol and opioids.
- **Second line drugs**

- Opioids
- Tramadol.
- **Third line drugs**
- Antidepressants – citalopram, paroxetine, bupropion.
- Anticonvulsants – carbamazepine, lamotrigine, oxcarbazepine.

### Non-pharmacological treatment

- Education – patient, family and society.
- Self care encouragement.
- Psychological and psychiatric support – cognitive/behavioral therapy, relaxation therapy.
- Physiotherapy

### IASP Guideline for managing neuropathic pain<sup>20</sup>

#### Step 1

- Assess for pain and establish the diagnosis of neuropathic pain, and if not sure about the diagnosis, refer the patient to a pain specialist or neurologist.
- Establish and treat the cause of neuropathic pain, and if uncertain about availability of treatments addressing the etiology of neuropathic pain, refer to appropriate specialist.
- Detect the relevant comorbidities (e.g., cardiac, renal, or hepatic disease, depression, gait instability) that might be relieved or exacerbated by NP treatment, or that might require dosage adjustment or additional monitoring of therapy.
- Educate the patient on the diagnosis and treatment plan, and establish realistic expectations.

#### Step 2

- Start the treatment of the disease causing neuropathic pain if possible.
- Commence symptomatic relieve of pain with one or more of the following:
  - Antidepressant drug
  - Calcium channel  $\alpha_2$ - $\delta$  ligand
  - Topical lidocaine
  - Opioid analgesic or tramadol
- Patient evaluation for non-pharmacologic treatments, and possibility of initiating the treatment if appropriate.

#### Step 3

- Frequent reassessment of the patient's health-related quality of life and pain.
- If substantial pain relief and tolerable side

effects, continue treatment.

- If partial pain relief after an adequate trial, add 1 of the other first-line medications.
- If no or inadequate pain relief (<30% reduction) at target dosage after an adequate trial, switch to an alternative first-line medication.

#### Step 4

- If trials of first-line medications alone and in combination fail, consider second-line medications or referral to a pain specialist.

### Monitoring of treatment and follow up<sup>21-25</sup>

- Tailoring of treatment regimens to the individual patient requires that regular assessments of adequacy of analgesia and any adverse effects of analgesic drugs or techniques are performed and documented.
- Proper assessment and control of pain requires patient involvement and measurement, using self-reporting techniques, and frequent assessment and reassessment of pain intensity and effect of any intervention.
- Pain should be assessed both at rest and during activity. In addition to patient comfort, pain relief should be assessed with respect to adequate function including physical therapy requirements and mobilisation.
- Unexpected levels of pain, or pain that suddenly increases, may signal the development of a new medical, surgical or psychiatric diagnosis.
- All side effects and significant complications should be recorded, as should treatment changes resulting from these issues.

### Quality assurance<sup>21-25</sup>

1. Regular audits of pain management should be instituted to assess continuing effectiveness of any treatment and incidence of side effects and adverse effects.
2. It is recommended that a record is made of patient demographics, analgesic drugs, techniques used, pain reports and any adverse effect that occurred.

### Conclusion

Neuropathic pain results from damage or dysfunction in the somatosensory system. The pain is often triggered by an injury, but this injury may or may not involve actual damage to the nervous system. It can be spontaneous,

continuous, paroxysmal, or evoked with some common features include tingling, pins and needles, and crawling sensations. Neuropathic pain impairs patients' overall quality of life, and it's difficult to treat, generating substantial cost to the society. Usually, neuropathic pain is not fully reversible, but partial improvement is often possible with proper treatment using pharmacological and non-pharmacological methods. Some assessment tools like Neuropathic Pain Questionnaire, Douleur Neuropathique en 4 questions, Leeds Assessment of Neuropathic symptoms and sign, and Pain Detect proves helpful in its diagnosis.

### References

- Loeser JD, Treede R. Tropical review – The Kyoto protocol of IASP basic pain terminology. *Pain* 2008; 137: 473–477.
- Greenfield S. mind, brain and consciousness. *Br J Psych* 2002; 181: 91–93.
- Pain Terms, A Current List with Definitions and Notes on Usage" (pp 209-214) *Classification of Chronic Pain, Second Edition, IASP Task Force on Taxonomy*, edited by H. Merskey and N. Bogduk, IASP Press, Seattle, ©1994.
- Treede RD, Jensen TS, Campbell JN, et al. Neuropathic pain: redefinition and a grading system for clinical research purposes. *Neurology*. 2008; 70:1630-1635.
- Oaklander AL, Gabb M. The pathology of neuropathic pain. *Adv Stu Med* 2001; 1(6): 237–240
- Fear C. Neuropathic pain: clinical features, assessment and treatment. *Nurs Stand*. 2010; 25(6): 35-40.
- Oster G, Harding G, Dukes E, Edelsberg A, Cleary PG. Pain, medication use, and health-related quality of life in older persons with postherpetic neuralgia: results from a population-based survey. *J Pain*. 2005; 6: 356-363.
- McDermott AM, Toelle TR, Rowbotham DJ, Schaefer CP, Dukes EM. The burden of neuropathic pain: results of a cross-sectional survey. *Eur J Pain*. 2006; 10:127-135.
- Jensen MP, Chodroff MJ, Dworkin RH. The impact of neuropathic pain on health-related quality of life: review and implications. *Neurology*. 2007; 68:1178-1182.
- O'Connor AB. Neuropathic pain: a review of the quality of life impact, costs, and cost-effectiveness of therapy. *Pharmacoeconomics*. 2009; 27:95-112.
- Berger A, Dukes EM, Oster G. Clinical characteristics and economic costs of patients with painful neuropathic disorders. *J Pain*. 2004; 5: 143-149.
- Dworkin RH, White R, O'Connor AB, Baser O, Hawkins K. Health-care costs of acute and chronic pain associated with a diagnosis of herpes zoster. *J Am Geriatr Soc*. 2007; 55:1168-1175.
- Size M, Soyannwo OA, Justins DM. Pain management in developing countries. *Anaesthesia*, 2007; 62 (1): 38–43
- Kitahata LM. Pain pathways and transmission. *Yale J Biol Med*. 1993; 66(5): 437-442.
- Baron R, Binder A, Wasner G. Neuropathic pain: diagnosis, pathophysiological mechanisms, and treatment. *Lancet Neurol*. 2010; 9(8): 807-819.
- Chetty S, Baalbergen E, Bhigjee AI, Kamerman P, Ouma J, Raath R, Raff M, Salduker S. Clinical practice guidelines for the management of neuropathic pain: expert panel recommendations for South Africa. *S Afr Med J* 2012; 102(5): 312-325.
- Tennant F. The Physiologic Effects of Pain on the Endocrine System. *Pain Ther* 2013; 2:75–86.
- Weissman C. The metabolic response to stress: An overview and update. *Anesthesiology* 1990; 73(2): 308-315.
- Chapman CR, Tuckett RP & Song CW. Pain and stress in a systems perspective: reciprocal neural, endocrine, and immune interactions. *J Pain* 2008; 9(2): 122–45.
- Dworkin, R.H., O'Connor, A.B., Backonja, M. et al. Pharmacologic management of neuropathic pain: evidence-based recommendations. *Pain*. 2007; 132: 237–251.
- Wang J, Christo PJ. The influence of prescription monitoring programs on chronic pain management. *Pain Physician*. 2009; 12(3): 507-15.
- Rose DK, Cohen MM, Yee DA. Changing the practice of pain management. *Anesth Analg* 1997; 84:764–772.
- M Bond. Pain education issues in developing countries and responses to them by the International Association for the Study of Pain. *Pain Res Manage* 2011; 16(6): 404-406.
- Brennan F, Carr DB, Cousins MJ. Pain management: a fundamental human right. *Pain Med* 2007; 105: 205–221.
- Cousins MJ, Brennan F & Carr DB. Pain relief: a universal human right. *Pain* 2004; 112(1-2): 1–4.

# LITIGATION AND THE ANAESTHETIST

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## **ABSTRACT**

**INTRODUCTION:** *Hospitals deal with life and health of their patients. Good medical care relies on well trained doctors and nurses and on high quality facilities and equipment. Healthcare litigation is increasingly common and represents a significant cost in healthcare expenditure. The immediate goal of any anaesthetist is to ensure that key components of care are effectively delivered and safety maintained throughout.*

**SOURCES OF LITIGATION AGAINST THE ANAESTHETIST:** *Damage to the teeth during general anaesthesia is a frequent source of litigation against anaesthetist. Other sources are anaesthetist mishaps from over dosage, technical failure, equipment failure, negligence, ventilation problems, oesophageal intubation, awareness, drug errors, anaphylaxis, mortality, morbidity. Also due to peripheral nerve injuries, injuries from positioning, direct needle damage during regional anaesthesia, inadequate padding and poor positioning.*

**CONCLUSION:** *Any intervention does carry an element of risk. Some are made due to human errors. Peripheral nerve injury is usually avoidable. Nerve injury can be severe, permanent disability. Good positioning of the patient for surgery can reduce the risk of most perioperative nerve injuries. Some litigations against an anaesthetist can be avoided by taking cautions, labelling drugs, good positioning, calling for help when in need and good record keeping.*

**KEY WORDS:** *Anaesthetist, Litigation, Injury, Patient.*

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## **INTRODUCTION**

Patients are becoming aware of their rights and getting litigation conscious as a result of what they consider to be professional negligence<sup>1</sup>. Medicine can never be free of mishaps<sup>2</sup>. The litigation process can provide a means for patients and their families to gain more information of medical injuries<sup>3</sup>. Doctors all over the world are facing escalating litigations with marked increase in the number of litigation claims and value of financial awards<sup>2,4</sup>. Litigation is defined as the pursuit of compensation through legal action, typically via the civil courts<sup>5</sup>. Medical litigation occurs when the client or patient feels not satisfied with the treatment especially when the complications, lack of communication or preventable injuries have occurred. In medical litigation, the patient or his family are usually the plaintiff while the doctor or hospital is the defendant<sup>6</sup>. We live in an increasingly litigations society, where individuals

frequently expect to have perfect health care outcomes and if not expect financial recompense<sup>5</sup>. The doctor whose duty is to care for their patients, if it fails show due care or skill in medical treatment resulting in death, injury or pain of the patient gives rise to a cause of action in negligence<sup>7</sup>. A charge of professional negligence against a medical man is serious<sup>7</sup>. Complications can result in patients suffering malpractice<sup>8</sup>. Claims lead to economic hardships. When patients sue doctors, their motivation is not necessarily only financial gain to compensate for pain, suffering and lost income. It may represent an attempt to ensure that others do not suffer the same fate in the future, or a wish to punish individual doctors or organizations particularly if they have never received an adequate explanation or apology for what has happened<sup>5</sup>. Litigation is distinct from other learning opportunities being grounded in adversarial process, compensation,

winners and losers and closed doors<sup>5</sup>. The cost of associated with litigation is high. Health care services have witnessed great evolution overtime. The development in health care is attributed to the upgrading technology, the facilities as well as the training and imposed experience of the medical practitioner. The increasing number of population together with the increased awareness regarding health matters has resulted in increasing trends of medical practice litigations. Several anaesthetists have been convicted for not following the standards of medical practice as well as negligence in follow up of patients.

Anaesthesiology is a high risk specialty however the public at large are not aware of the risks involved in anaesthesia<sup>9</sup>. Anaesthesiology is one medical specialty that is known to be related to medical malpractice. In any surgery, the anaesthetic is often more dangerous to the patient than the knife. Death can result from any problem with anaesthetist, patients can react poorly and there is little room for error. Anaesthetists are likely to be involved with an anaesthetic catastrophe at some point in their career. Anaesthetists in recent years have been subjected to many threats, court actions, judgements and settlements<sup>10</sup>. Anaesthetists are physicians' and any physician may be sued<sup>10</sup>. One of the most distressing findings from mortality studies is that anaesthesia is the major cause of death in perfectly healthy young patients undergoing uncomplicated operations<sup>11</sup>. The morale is clear; anaesthesia is not without risk and is undertaken lightly. The bulk of serious legal problems however fall within the sort of negligence. The public are becoming more aware of their rights and litigation is on the increase<sup>11</sup>. In the current system, it is likely that the harms of litigation outweigh the potential benefit. In anaesthesia, this is likely the result of over investigation, over referral and inappropriate cancellations all of which have negative effects on patient care. Critical care practitioners may avoid making difficult decisions for example end of life care, over investigate and make unnecessary referrals, all with massive costs implications. After severe adverse events, clinicians may change career or specialty or move abroad<sup>5</sup>. In a study by Cass on a 20 year study on medico-legal claims against anaesthetists, a total of 222 medico-legal claims involving 160 anaesthetists' members of Victorians largest medical indemnity organizational during the period 1980 to 1999 are reported with 35% anaesthetists having a claim. There were 49 claims in the first decade

and 173 in the second, with 84 related to dental injury being predominant. Other common causes of claims were awareness under anaesthesia, epidural anaesthesia, nerve palsies, postoperative complications and circulatory arrest<sup>12</sup>. This paper reviews sources of litigation against the anaesthetists.

## SOURCES OF LITIGATION AGAINST THE ANAESTHETISTS

### • Medical error

The administration of medications is central to anaesthetic care of patients<sup>13</sup>. Errors are inevitable in any human endeavour but should be distinguished with violations<sup>13</sup>. An error is defined as the failure of a planned action to be completed as intended or the use of a wrong plan to achieve an aim. Errors can include problems in practice, products, medications and systems<sup>14</sup>. Human beings by their very nature make mistakes; therefore it is unreasonable to expect error free human performance. Anaesthesia is dealing with human lives and most anaesthetic drugs are lethal without antidote in case of mistakes and error in any form such as dosage, administering the wrong drug can give rise to mortality. Medication error is a leading cause of morbidity in hospitalised patients and anaesthesia and critical care are no exception to it<sup>15-18</sup>. Man, medicine and machine are the main contributory factors to it<sup>16</sup>. Literature suggests that most practising anaesthetists have experienced at least one drug error<sup>17</sup>. Anaesthetists are one of the few groups of physicians who are personally responsible for drug administration<sup>16</sup>. Medication errors are common in the health care system and reported to be the seventh most common cause of death<sup>16</sup>.

It is said 'to err is human'. Physicians and in particularly anaesthesiologists are human and they are bound to commit mistakes. However, their mistakes lead to morbidity and mortality<sup>19</sup>. The incidence of medication error associated with anaesthetic practice is not certain. Given the patency, variety and frequency of the drugs administered to patients undergoing anaesthesia, the potential exists for errors with disastrous consequences<sup>15</sup>. Several studies indicate that medication errors are a common adverse event in patients undergoing anaesthesia. Anaesthetic drug errors have been reported for every aspect of anaesthetic related care. Factors contributing to medication error are syringe swab, not reading label on ampoule, misidentification of ampoule or vial, drug incorrectly stocked and injection of the



wrong dose<sup>15</sup>. The task of administering an intravenous drug to a patient during anaesthesia is a highly complex procedure, often taking place under conditions of stress, haste and fatigue<sup>18</sup>. The most common medication error is syringe swab that involves the administration of a neuromuscular relaxant when an anticholinesterase is intended<sup>15</sup>. Several studies indicate that medication error is a common adverse event in patients undergoing anaesthesia<sup>15</sup>. During anaesthesia, most drug errors are totally or partially attributed to human error which is an inherent part of human psychology and activity hence the occurrence of error can only be reduced and eliminated<sup>17</sup>. Labelling is a key element of medication safety<sup>13</sup>. The process by which medications are procured, stored, deployed, prescribed and administered to patients is complex, hence it is not surprising that medication errors contribute substantially to most analyses of the overall problem in iatrogenic harm in healthcare<sup>13</sup>. Labelling of vials, ampoules, syringes, bags and lines is an important part of medication safety. Making decisions about medications is one of the primary responsibilities of anaesthetists and a great deal of effort is invested into training them to do this<sup>13</sup>. Pharmacology is a complicated field and there are many factors to consider particularly in the perioperative period hence it is understandable that mistakes can and do occur. An adverse medication error (AME) is any injury related to the use of a medication this should include any injury related to the omission of an indicated medication. An AME may or may not follow an error or violation and some AMEs are preventable while are not. The frequency of medication errors are difficult to determine accurately, most estimates are based on incident reporting and the proportion of errors reported is usually unknown. It seems likely that medications errors often go completely unnoticed and could not be reported. Medication errors occur in anaesthetic practice and inadequate labelling has often been identified as contributing to these errors<sup>13</sup>. Effective strategies that reduce medication error would enhance patient safety opportunity<sup>15</sup>. Simple vigilance during handling and administering of drugs is of utmost importance.

- **Injury**

In response to medical treatment, side effects may occur and the patient may be injured<sup>20,21</sup>. It has become accepted that patients complain if the medical treatment

is associated with an injury or an unexpected side effect. Respiratory incidents are more likely to result in death or permanent injury compared with other incidents and therefore the highest financial compensations were granted to patients who had injuries caused by severe hypoxaemia. Research has found that adverse respiratory events are the largest source of injury and resulted in a high number of poor outcomes in healthy patients undergoing elective surgery<sup>20</sup>.

Physical disabilities of patients can be minor due to pain or scarring. Major disabilities that interfere with the activities of daily living and catastrophic due to severe neurological impairment and the worst of all, death can result<sup>20</sup>. Injuries can result from improper positioning although the majority of these lesions typically recover overtime, a small number do not recover and therefore give rise to disability. The use of intra-operative protective padding as well as securing the patients position seem to be important factors in preventing these injuries. Prevention remains the mainstay of the management of positioning injuries<sup>20</sup>. Perioperative peripheral nerve injuries (PPNI) are a common and potentially catastrophic complication of anaesthesia and surgery. These injuries include a range of morbidity from transient and clinically minor injury through to severe permanent injury. While causative factors in PPNI can be multifactorial, optimum positioning of surgical patients is helpful to reduce the risk of patient harm<sup>22</sup>. Injuries and complications can result from various regional techniques<sup>8</sup>. Spinal haematoma can result as a complication of Neuraxial block leading to paraplegia.

Damage to the teeth during general anaesthesia is a frequent cause of morbidity for patients and a source of litigation against anaesthetists<sup>23</sup>. Dental damage ranges from loosening or fracture of a tooth to the loss of restoration or to a complete displacement of a tooth from its socket<sup>23</sup>. Dental injuries tend to occur most frequently in the upper anterior region and in particular, to the left central incisor because of the damage caused by the position of the laryngoscope in the oral cavity<sup>23</sup>. Most dental damage are identified by the anaesthetists at the time of intubation, a number of cases can be missed<sup>23</sup>. Causes of dental damage during anaesthesia are enamel fracture, loosening or subluxation of the tooth, luxation or avulsion, missing tooth or teeth and damage to dental restorations. Prosthetic crowns, fixed partial

dentures and dislodgements of veneers<sup>19</sup>. The cause of dental trauma is due to direct trauma. The highest incidence of dental trauma occurs in patients undergoing an endotracheal intubation for a general anaesthesia<sup>19</sup>.

Biting is a common occurrence during the emergence from general anaesthesia and generates considerable forces that are concentrated on incisors when oropharyngeal airway is used as bite blocks. During the preoperative assessment, the anaesthetist should enquire about loose teeth, unstable crowns, veneers, bridge work and any intraoral prostheses<sup>19</sup>. Injury can occur to the eye during general anaesthesia when the patient is paralysed and cannot blink.

- **Equipment and technique failure**

Equipment failure is a cause of litigation against the anaesthetist. The equipment without been noticed for instance a wrong gas can be bottled in the wrong cylinder. Anaesthetic technique and equipment have undergone significant safety improvements<sup>18</sup>. Techniques of invasive monitoring may reduce adverse complications or death. It is the duty of the anaesthetist to check the equipment's including gas cylinders and anaesthetic machine prior to operation and to ensure that the equipment's are functioning correctly throughout the period when the patient was dependent on it<sup>7</sup>.

- **Awareness under anaesthesia**

Many patients are more afraid of their anaesthetic than their surgery and one of their concerns is "I won't wake up during the operation"<sup>24</sup>. Awareness generally occurs where there is an imbalance between the depth of anaesthesia and the stimulus to which a patient is exposed<sup>24</sup>. The patient may hear a nasty comment made in the operating without the surgeon or anaesthetist knowing due to awareness under anaesthesia.

## **PREVENTION OF LIGATION AGAINST THE ANAESTHETIST**

No one can prevent a patient from bringing action against a doctor justified or not<sup>10</sup>. Some of the precautions to be taking are personal contact with patient to take history and physical examination, obtain consent for anaesthesia and surgery, identification of the right patient, sometimes the wrong patient is being amputated or the good eye enucleated<sup>10</sup>. There are guidelines on minimum standards of safety for patients

undergoing general anaesthesia that should be followed<sup>11</sup>.

Apart from a high standard of professional practice, there are other ways in which anaesthetists can minimise medico-legal risks and the potentials for legal claims. The maintenance of good records timely, accurate and detailed record keeping will greatly enhance defence to any legal claim. The lack of medical records will inevitably weaken a defence<sup>25</sup>. Anaesthetists have an obligation to minimise the problem of fatigue as far as possible in the context in which they are working. Employers have an obligation to optimise rosters and working/resting conditions to minimise risk of fatigued anaesthetists. Anaesthetists should be aware of the problem of fatigue and less favourable outcome during night duty and prolonged shifts<sup>26</sup>.

## **CONCLUSION**

However careful a practitioner may be, he is never immune from the chance or accident which may involve him in litigation or the threat of it. Doctors in general, anaesthetists are subject to a range of medico-legal risks. Anaesthetists are reluctant to report their mistakes due to litigation. Anaesthesia improves the quality of all surgical procedures. Certain agents and techniques are sources of morbidity and mortality. Any intervention does carry an element of risk. Anaesthetic mishaps can result from over dosage, technical failure, equipment failure and negligence. Error can result from emergency set up, lack of sleep, lack of experience with technique and equipment, lack of skilled assistant, restricted access to the patient and inadequate vigilance. Injury to the patient can occur. Never administer Neuraxial block to an unwilling patient. The anaesthetic record should include the pre-anaesthetic assessment, intraoperative record and post-operative care.

## **REFERENCES**

1. University of Port Harcourt teaching hospital news. 2009. 3 (1): 15.
2. Magowan B. Churchill's pocket book of obstetrics and gynaecology. Churchill Livingstone. Edinburgh. 2000. 258-260.
3. Wessell MR. Medical ethics in litigation. Bull NY Acad Med. 1978. 54 (8): 808-809.
4. John ET. Ethics in obstetrics and gynaecology. In. Wakwe VC, Uche EEO (Eds). Fundamentals of

- bioethics in medical practice. University of Port Harcourt press limited. Port Harcourt. 2000. 39-44.
5. Adams JP, Bell MDD, Bodenham AR. Quality and outcomes in anaesthesia: lessons from litigation. *Bri J Anaesth*. 2012. 109 (1): 110-22.
  6. Longman dictionary of contemporary English. Pearson Longman. London. 2006. 945.
  7. Neerja P, Talwar A. Surgeon, Anaesthetist CPA. *JK Sci*. 2005. 7 (2): 61-63.
  8. Peng P, Smedstad K. Reports of investigation. Litigation in Canada against anaesthesiologists practising regional anaesthesia: a review of closed claims. *Can J Anaesth*. 2000. 47. 2: 105-112.
  9. Parakh SC. Legal aspects of anaesthesia practice. *Indian J Anaesth*. 2008. 52 (3): 247-257.
  10. Graves HB. The medico-legal responsibilities of the anaesthetists. *Can Anaesth Soc J*. 1957. 4 (4): 428-433.
  11. Krishna SR. Medico-legal aspects of anaesthesia practice. *Med J Malaysia*. 1991. 46 (4): 320-328.
  12. Cass NM. Medico-legal claims against anaesthetists: a 20 year study. *Anaesth Intensive Care*. 2004. 32 (1): 47-58.
  13. Merry AF, Ship DH, Lowinger JS. The contribution of labelling to safe medication administration in anaesthetic practice. *Best Practice Res Clin Anaesth*. 2011. 25: 145-159.
  14. Kohn LT, Corrigan JM, Donaldson MS. Editor. To err is human: building a safer health system. Washington dc. National Academy Press. 1999: 27.
  15. Beverly AO, Robert JBC, Yee DA. Medication errors in anaesthetic practice: a survey of 687 practitioners. *Can J Anaesth*. 139-146.
  16. Dilip K, Suman G, Chetan S, Saroj K. Medication error in anaesthesia and critical care: a cause for concern. *Indian J Anaesth*. 2010. 54 (3): 187-192.
  17. Evley R. Drug errors in anaesthesia: technology systems and culture. The University of Nottingham. 2011.
  18. Abeysekera A, Bergman IJ, Kluger MT, Short TG. Drug error in anaesthetic practice: a review of 896 reports from the Australian incident monitoring study database. *Anaesth*. 2005. 60: 220-227.
  19. Tabbarah R, Tabbarah S, Kanazi GE. Medico-legal aspects in anaesthesia: how to lead a happy life. *M.E.J. Anaesth*. 2006. 18 (5): 985-994.
  20. Hove LD, Nielson HB, Christoffersen JK. Patient injuries in response to anaesthetic procedures cases evaluated by the Danish patient insurance association. *Acta Anaesthesiol Scand*. 2006. 50: 530-535.
  21. Cook TM, Bland L, Mihai R, Scott S. Litigation related to anaesthesia: an analysis of claims against the NHS in England. *Anaesth*. 1995-2007. 2009. 64: 706-718.
  22. Webster K. Peripheral nerve injuries and positioning for general anaesthesia. *Anaesthesia tutorial of the week*. [www.totw.anaesthesiologists.org](http://www.totw.anaesthesiologists.org)
  23. Windsor J, Lockie J. Anaesthesia and dental trauma. *Anaesth Intensive Care Med*. 2008. 9 (8): 355-357.
  24. Niraj N, Wilson I. Awareness under anaesthesia. *Tutorial of the week*. [www.totw.anaesthesiologists.org](http://www.totw.anaesthesiologists.org).
  25. Welfare of anaesthetists' special interest group. Medico-legal issues. Anaesthesia continuing education coordinating committee. Review Resource Document. 2011.
  26. Mellin-Olsen J, O'Sullivan E, Balogh D, Drobnik L, Knape JTA et al. Guidelines for safety and quality in anaesthesia practice in the European Union. *Europ J Anaesth*. 2007. 24: 479-482.

# RHINOLOGIC SURGERIES IN THE UNIVERSITY OF PORT HARCOURT TEACHING HOSPITAL: A 5 YEARS RETROSPECTIVE ANALYSIS.

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## ABSTRACT

**BACKGROUND:** Rhinologic diseases that require surgical interventions appear to be on the increase in this day and age and newer surgical techniques including various forms of endoscopic sinus surgeries are now commonplace.

**AIMS** This study established the pattern of rhinologic surgeries as seen in the University of Port Harcourt Teaching Hospital (UPTH), Port Harcourt, Nigeria. It also evaluated the outcome of management and its challenges.

**PATIENTS AND METHODS:** Theatre records of patients who had rhinologic surgeries in the Ear, Nose and Throat (ENT) surgery department of UPTH from January 2008 to December 2012 were reviewed for all essential clinical data.

**RESULTS:** Sixty patients had rhinologic surgeries during the study period. There were 37 males and 23 females (male: female ratio of 1.6:1.0). Age range was 5days to 70 years, mean of 34.6 (SD +/- 10.4) years. The age group that has the highest number of surgeries was 31-45 years. The commonest rhinologic surgery done was nasal polypectomy + bilateral intranasal anastrostomy followed by Caldwell-Luc operation. The commonest indication for surgery was recurrent nasal polyposis followed by chronic maxillary rhinosinusitis.

**CONCLUSION:** This study established the pattern of rhinologic surgeries as seen in the University of Port Harcourt Teaching Hospital. The commonest surgeries were nasal polypectomy with or without anastrostomy and Caldwell-Luc operation. The outcome of surgery can be improved upon when procedures are done endoscopically by well trained personnel.

**KEY WORDS:** Rhinology, Rhinologic surgeries, nasal polyps, chronic maxillary sinusitis, Caldwell-Luc operation, Endoscopic sinus surgery.

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## INTRODUCTION

Rhinology encompasses clinical and surgical treatment of the nasal cavity and para-nasal sinuses. It is a growing subspecialty with advances in the surgical, clinical, and research realms<sup>1</sup>. A Rhinologist is a board-certified otolaryngologist (ear, nose, and throat physician) who sub-specializes in the diagnosis and management of diseases of the nose and para-nasal sinuses, as well as disorders of the skull base. Rhinologists receive intensive training on the medical and minimally invasive surgical treatment of chronic nasal and sinus disorders including rhino-sinusitis, nasal polyps, nasal congestion, sinonasal neoplasms, lacrimal disorders, thyroid eye disease, pituitary tumors, sinonasal cerebrospinal fluid leaks, anterior skull base tumors, and optic nerve decompression. This includes treatment for all forms of

sinus infection, nasal obstructions, sinus headaches, and difficulty with smell and taste. They are experts in endoscopic sinus surgery<sup>1</sup>. While patients are often referred to Rhinologists by primary care physicians, they are also commonly consulted by fellow ENT physicians, Neurosurgeons, and Ophthalmologists<sup>1,2</sup>. Rhinologic complaints account for a significant number of ENT ailments in our environment<sup>3</sup>. Rhinosinusitis is said to be the commonest viral infection in man and the commonest inflammatory disorder encountered by general practitioners, chest physicians, and otorhinolaryngologists all over the world<sup>3,4,5</sup>. While more than one sinus may be involved, the maxillary sinus has been found to be the commonest sinus affected<sup>5</sup>. Whereas most cases are amenable to medical treatment, a significant proportion will require surgical

intervention<sup>3</sup>.

Newer surgical techniques including various forms of endoscopic sinus surgeries are now commonplace in the developed countries. However, rhinologic practice in Nigeria as in most developing countries has been hampered by the dearth of Otorhinolaryngologists, inadequacy of proper diagnostic and therapeutic facilities as well as poor training facilities for the upcoming otolaryngologist<sup>3,5</sup>.

The University of Port Harcourt Teaching Hospital is a tertiary healthcare facility in the Niger-Delta region of Southern Nigeria and serves as a referral centre to primary, secondary and other tertiary health facilities in the region.

Knowledge of the pattern of rhinologic surgeries in our environment will help draw attention to the challenges in the practice of rhinology and encourage funding for the training of rhinologists. This will lessen the current high trend of medical tourism with its consequent economic burden. There is a paucity of data on the pattern of rhinologic surgeries in our environment hence this study is aimed at determining the pattern of rhinologic surgeries in the University of Port Harcourt Teaching Hospital.

## PATIENTS AND METHODS

This was a retrospective study of patients who had rhinological surgeries in the department of Ear Nose and Throat (ENT) surgery of UPTH from January 2008 to December 2012. The patient's data were retrieved from the theatre registers, clinic registers and patients case notes. Surgeries of the naso-pharynx such as adenoidectomy were excluded. Demographic data (age and sex), types of rhinologic surgeries and the indication for surgeries were recorded. The results were tabulated and analyzed using descriptive statistics.

## RESULTS

Sixty patients had rhinologic surgeries, out of 245 surgeries carried out in the ENT theatre during the study period giving a prevalence of 24.5%. There were 37 males and 23 females (male: female ratio of 1.6:1.0). Patients were aged between 5 days to 70 years, with a mean of 34.6 (SD +/- 10.4) years. The highest number of surgeries was among the 31-45 years age group (Table 1). The commonest rhinologic surgery done was nasal polypectomy with bilateral intranasal anastomosis followed by Caldwell-Luc operation (Table 2). The commonest indication for surgery was recurrent nasal polyposis followed by chronic maxillary rhinosinusitis (Table 3).

**TABLE 1: SHOWING PATIENT AGE DISTRIBUTION**

AGE RANGE (YEARS)	NUMBER	PERCENTAGE (%)
0-15	10	16.67%
16-30	15	25.00%
31-45	25	41.67%
46-60	8	13.33%
61-75	2	3.33%

**TABLE 2: SHOWING TYPES OF RHINOLOGIC SURGERIES**

<b>TYPE OF RHINOLOGIC SURGERY</b>	<b>NUMBER</b>	<b>PERCENTAGE (%)</b>
Nasal polypectomy+left intranasal anastrostomy	8	13.33%
Nasal polypectomy+ bilateral intranasal anastrostomy	14	23.33%
Nasal polypectomy+right intranasal anastrostomy	6	10.00%
Caldwel Luc operation	10	16.67%
Examination of the nose/nasopharynx+ extraction of foreign bodies	6	10.00%
Examination of the nose/nasopharynx+biopsy	4	6.67%
Incision and drainage of septal haematoma	2	3.33%
External frontoethmoidectomy	5	8.33%
Closed reduction of nasal fracture	2	3.33%
Medial Maxillectomy	2	3.33%
Excision of choanal atresia	1	1.68%

**TABLE 3: SHOWING INDICATIONS FOR RHINOLOGIC SURGERIES**

INDICATION FOR RHINOLOGIC SURGERY	NUMBER	PERCENTAGE (%)
Nasal bone fracture	2	3.33%
Recurrent nasal polyps+ maxillary sinusitis	28	46.67%
Septal Hematoma	2	3.33%
Chronic maxillary sinusitis	7	11.67%
Foreign bodies in the nose/nasopharynx	6	10.00%
Nasopharyngeal tumour	4	6.67%
Fibrous dysplasia of the nasal bone	1	1.67%
Frontoethmoidal Mucocele	5	8.33%
Closed reduction of nasal fracture	2	3.33%
Sino nasal tumour	2	3.33%
Choanal atresia	1	1.67%

#### DISCUSSION

The number and variety of surgical operations carried out in a centre is dependent on the surgical skill available, the volume of patients, the availability of necessary materials and instruments, the cost of surgery and the internal policies of the hospital<sup>6,7</sup>. Rhinologic surgeries in this study accounted for 24.5% of the total surgeries carried out in the ENT theatre of the University of Port Harcourt Teaching Hospital. This is slightly higher than the prevalence of 20.6% gotten for nasal surgeries by da Lilly-Tariah and Peterside in 2008 in their evaluation of the scope of ear nose and throat surgeries in the theatre of University of Port Harcourt Teaching Hospital<sup>4</sup>.

This increase may be attributable to the addition of two extra consultants to the work force of the ENT department which had only two consultants as at the

time of their study. This prevalence is also similar to that of Adoga et al in their study of Audit of Otorhinolaryngological Practice in a Nigerian Teaching Hospital in Jos in 2008 where they got 26.7% as a reflection of the burden of rhinologic ailments in their environment<sup>2</sup>.

The male female ratio of 1.6:1.0 showed a slight male preponderance of rhinologic surgeries in our center. This finding is similar to that of da Lilly-Tariah and Peterside who found ENT surgeries to be commoner in males with a male female ratio of 1.6:1. It is however at variance with the female preponderance of rhinosinusitis (1.4:1.0) seen by Iseh and Makusidi in Sokoto<sup>3</sup>. This variance could be explained by the fact that their study was focused on rhino-sinusitis while this study encompasses other rhinologic ailments requiring

surgery.

Nasal polypectomy carried out in each of the nasal cavity coupled with intranasal antrostomy or bilateral intranasal antrostomies were the commonest surgeries done, accounting for 46.66% of all the rhinologic surgeries carried out within the study period. This agrees with the study done by Adoga et al in which intra nasal antrostomy and nasal polypectomy accounted for 89% of all rhinologic surgeries done in their centre<sup>3</sup>. However this finding shows a slight variation from the work of da Lilly-Tariah and Peterside in Port Harcourt 2008, in which Caldwell-luc was found to be the commonest rhinologic surgeries performed. However, both forms of surgeries address the same pathology of chronic sinus disease<sup>4</sup>.

Rhinologic surgeries were found to be most prevalent among the ages of 31 to 45 years.

This is in keeping with the fact that nasal polyps are a disease of adults occurring mostly within the ages of 30 and 60 years although children with cystic fibrosis and occasionally teenagers develop them<sup>3,7</sup>.

Recurrent nasal polyps secondary to chronic maxillary sinusitis was the commonest indication for rhinologic surgeries in this study (46.67%). This agrees with the work of Iseh and Makusidi in Sokoto, which found the chronic form of rhino-sinusitis to be more prevalent (83.6%) with 13.7% of cases requiring surgical treatment<sup>3</sup>.

Although minimal invasive surgery is the current trend in surgical practice and some endoscopic surgical equipment have been acquired in our study centre, all the surgeries in this study were carried out in the conventional manner none of our patient had endoscopic sinus surgery. This is mainly due to the lack of adequate skills in the performance of endoscopic sinus surgery as a result of unavailability of funding for the training of residents and consultants in this crucial area. Consequently, patients who require endoscopic sinus surgeries are either referred to other centres within or outside the country.

## CONCLUSION

This study established the pattern of rhinologic surgeries as seen in the University of Port Harcourt Teaching Hospital. The commonest surgeries were nasal

polypectomy with or without antrostomy and Caldwell-Luc operation. The scope of rhinologic surgeries in our centre was limited to the treatment of complications of chronic rhino-sinusitis and other minor procedures.

It is therefore, pertinent that adequate funding and study grants be made available by the government for the purpose of training resident doctors specializing in otolaryngology and consultants in the field of rhinology. This will contribute in no small measure to a reduction in high rate of medical tourism with its consequent economic burden.

## REFERENCES

1. **Walen SG, Rudmik LR, Lipkewitch S, Dixon E, Mechor B.** Training, practice, and referral patterns in rhinologic surgery: survey of otolaryngologists. *J Otolaryngol Head Neck Surg.* 2010 Jun; 39(3):297-303.
2. Adoga A. et al, An Audit of Otorhinolaryngological Practice in A Nigerian Teaching Hospital. *Internet J Otorhinolaryngol.* 2009; 9 Doi: 10.5580/272.
3. **Iseh KR, Mankusidi M.** Rhinosinusitis: a retrospective analysis of clinical pattern and outcome in north western Nigeria. *Ann Afr Med.* 2010; 9(1):20-6.
4. da Lilly-Tariah O.B., Peterside O.A. The Scope of Ear, Nose and Throat Surgeries In The Theatre of University Of Port Harcourt Teaching Hospital. *Journal of Med. in the Tropics* vol. 10 (1) 2008 pp. 15-22
5. Alan G. Kerr. *Scott-Brown's Otolaryngology*, Sixth edition, Volume 4, Rhinology (I.S. Mackay and T.R. Bull) Butterworth-Heinemann International Editions 1987 Pp 4/10/4.
6. Ogunleye AO, Nwaorgu OG, Lasisi AO. Complications of sinusitis in Ibandan, Nigeria. *West Afr J Med* 2001; 20: 98-101.
7. Lasisi O. *Otolaryngological Practice in the Tropics: A Profile of Met And Unmet Needs.* The Internet Journal of Otorhinolaryngology. 2007 Volume 7 Number 2.



# THE PRINCIPAL CAUSES OF HOSPITALIZATION AMONGST THE ELDERLY OVER A FIVE YEAR PERIOD (2002-2006) IN A TERTIARY HEALTH FACILITY IN SOUTHERN NIGERIA.

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## ABSTRACT

**BACKGROUND:** *Worldwide the population of the elderly is escalating hence their health need is also increasing but in a number of regions including Nigeria, little or no attention is given to the needs of the elderly.*

**AIM** *The study was done to identify the principal causes of hospitalization amongst the elderly population and the outcome of management.*

**METHODS:** *It is a retrospective study case series review of 1,046 elderly patients admitted in adult wards of the University of Port Harcourt Teaching Hospital.*

**RESULTS:** *The elderly accounted for 8.95% of the total admissions over the five year period. The principal causes of admissions were cerebro vascular disease(CVD), congestive cardiac failure (CCF), diabetes mellitus(DM) and its complications, hypertension with complications and cataracts. The male sex had a slight preponderance and disorders such as CVD, CCF, DM with its complications and malignancy were chief causes of mortality.*

**CONCLUSION:** *Physicians and care givers should be more alert to health needs of the older population. There is need for prompt diagnosis, medical care and rehabilitation to avoid worse outcomes in the elderly including preventable deaths.*

**RECOMMENDATION** *Research in management of common health problems of the elderly, establishing a geriatric department as well as nursing homes well equipped to cater for their needs and promote active aging.*

**KEY WORDS:** *Principal, Hospitalization, Elderly*

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## Introduction

The definition of the elderly refers to persons aged sixty five years and above.<sup>1, 2, 12</sup> Elderly or aged persons are classified into three categories; - the young old (65-74), old old (75-84) and oldest old (>85 years).<sup>3</sup> Irrespective of this definition, in the African rural community where birth record services are not available, elderly persons are noticed by their physical appearance.

The aging of the population means an increase in the proportion of people aged 65 years and above not merely an increase in the number. In 1970, the number of elderly persons was estimated at 291 million or 8% of the population. In 2000, the number reached 585 million increasing the

proportion to 9%.<sup>4</sup> The Chinese are noted to have the highest number of elderly persons and it estimated that the elderly will make about 11% of its population at the end of the century.<sup>5</sup>

Aging of an individual is based on changes beginning at conception and following a definite program throughout life. The theories which have been proposed to account for aging process include gradual cellular damage through gene mutation, programmed cell death and free radical formation, aging is universal and it doesn't cause break down in homeostasis unless the system is stressed.<sup>6</sup>

Unlike the developed countries of the United

Kingdom (UK) and the United States of America(USA) where the elderly have special considerations, geriatrics have not been given much consideration in Nigeria and very few studies have been carried out.

### Aim

The study aims to ascertain the principal causes of hospitalization. It also will determine the proportion of the elderly that make up hospital admissions, the social demography of the elderly, to determine outcome of admissions and propose measures at prevention of hospitalization.

### Methods

This is a retrospective study of documented records of elderly patients admitted to all the wards of health facility over the five year period 2002-2006. The exclusion criteria were patients that are less than 65 years old and those treated on outpatient basis. The extracted data were folder number, age, sex, date admitted, date discharged, address location, diagnosis and outcome of admissions.

Data was analyzed using SPSS.11.0 and Microsoft excel. Limitations included missing records and under reported records.

### Results

A total of 1,046 elderly patients were admitted into the adult wards over a five year period were analyzed. The elderly accounted for 8.95% of total admissions within the period which was 11,683. The eleven principal causes of hospitalization were CVD, CCF, prostate pathology, cataracts, chronic liver disease (CLD), septicemia, hernia, diabetic complications, other complications of hypertension apart from CVD and CCF, cervical cancer and fractures. The young old (65-74) age group had the highest frequency into the various wards. The sex distribution showed a slight male preponderance, in a ratio of 1.25:1. The average period of stay was noticed to be highest for fractures, a period of 68 days.

A total of 130 persons (12.4%), died in the course of the management, 21(2.4%) signed against medical advice and 895( 89.5%) were discharged home. The four leading causes of death were CVD complicating diabetes and hypertension(27.7%), malignancies(22.3%), CCF (7.7%), other complications of diabetes (7.7%); while the remaining deaths were 34.6%.The tables below illustrate the principal causes of hospitalization in the adult wards.

#### MALE SURGICAL WARD

Cases	Absolute frequency	Relative frequency%	Cumulative frequency
Fracture	21	44.68	44.68
Gangrene	7	14.89	59.57
Osteoarthritis	4	8.51	68.08
Lumber spondylosis	6	12.77	80.85
Malunion/nonunion	4	8.51	89.36
Others	5	10.46	100
Total	47	100	

#### EMALE SURGICAL WARD (2002-2003 not included)

Cases	Absolute frequency	Relative frequency%	Cumulative frequency
Breast cancer	13	11.60	11.60
Hernia	23	20.54	32.14
Goiter	10	8.93	41.17
GIT pathology	38	33.93	75.00
Others	28	25.00	100
Total	112	100	

**OPHTHALMOLOGY**

<b>Cases</b>	<b>Absolute frequency</b>	<b>Relative frequency%</b>	<b>Cumulative frequency</b>
Cataract	80	78.43	78.43
Ruptured globe	6	5.88	84.31
Panopthalmitis	5	4.90	89.21
Glaucoma	5	4.90	94.11
Keratitis	2	1.96	96.07
Endophthalmitis	1	0.98	97.05
Others	3	2.94	99.99
Total	102	100	

**ORTHOPAEDIC WARD**

<b>Cases</b>	<b>Absolute frequency</b>	<b>Relative frequency%</b>	<b>Cumulative frequency</b>
Fracture	21	44.68	44.68
Gangrene	7	14.89	59.57
Osteoarthritis	4	8.51	68.08
Lumber spondylosis	6	12.77	80.85
Malunion/nonunion	4	8.51	89.36
Others	5	10.46	100
Total	47	100	

**MALE MEDICAL WARD**

<b>Cases</b>	<b>Absolute frequency</b>	<b>Relative frequency%</b>	<b>Cumulative frequency</b>
CVD	75	25.08	25.08
CCF	44	14.72	39.80
Liver pathology	27	9.03	48.83
Septicemia	14	4.68	53.51
GIT pathology	5	1.67	67.88
DM complications	38	12.70	76.91
Hypertension and other complication.	27	9.03	83.93
Respiratory path.	21	7.02	86.93
Renal failure	9	3.01	86.94
Others	39	13.04	100
Total	299	100	

**FEMALE MEDICAL WARD**

Cases	Absolute frequency	Relative frequency%	Cumulative frequency
CVD	64	32	32.0
CCF	23	11.5	43.5
Liver pathology	11	5.5	49.0
Hypertension and other complications	11	9.5	58.5
DM complications	38	19	77.5
Respiratory path.	18	9.0	86.5
Renal failure	5	2.5	89.0
Others	22	11.0	100
Total	200	100	

**EAR, NOSE AND THROAT WARD**

Cases	Absolute frequency	Relative frequency	Cumulative frequency
Parotid tumour	4	30.77	30.77
Tongue malignancy	1	7.69	38.46
Others	8	61.54	100
Total	13	100	

**OBSTETRICS AND GYNAECOLOGY**

Cases	Absolute frequency	Relative frequency	Cumulative frequency
Cervical cancer	21	38.89	38.89
Endometrial cancer	12	22.22	61.11
Ovarian tumors	5	9.26	70.37
Uterovaginal/ genital prolapse	6	11.10	81.48
Post menopausal bleeding	3	5.55	87.03
Vulva cancer/dystrophy	3	5.55	92.58
Others	4	7.41	99.99
Total	54	100	

**Discussion**

The study assessed the principal causes of hospitalization amongst the elderly in UPTH. Over the a five year period. The elderly amounting to 1,046 represent 8.95% of the total admissions into the adult wards of the centre within this period. The principal causes of hospitalization within this age group showed

CVD accounting for 21.4 %, CCF- 10.3%, prostatic disease- 19.6%, cataract -12.3%, liver disease- 5.8% septicemia- 2.2%, hernia-3.7%, other complication of DM-11.7%, hypertension and other complications 6.8%, fractures 3.2% and cervical cancer3.2%.

A similar study conducted at the same centre medical wards among the elderly showed; CVD- 7.8%, CCF-

15% and DM and its complications- 14.6%.<sup>7</sup>

This result despite the difference in study parameter and period has the same case prevalence probably it because it was done in the same area. A number of demographic factors including age and sex of patients were noticed to determine the distribution of the disease condition afore mentioned.

Of the three major groups of the elderly; the young old (65-74) was noticed to have the highest frequency of admission into various wards. Other studies done on the role of age in determining the distribution of admission showed different age range for specific diseases as seen in a study done in USA which recorded the highest frequency of hospitalization of asthmatic West Virginians in age group greater than 75 years and dementia in the ages greater than 90 years.<sup>8</sup>

Although age as a determinant of disease distribution differs depending on the type and region of occurrence of diseases, the young old with highest frequency as seen in our study is possibly related to our young population pyramid unique to developing countries like Nigeria. The life expectancy of Nigerians is put at 43 years for males and 47 years for females by the United Nations Development Program Report of 2006 explaining the relative small proportion of the elderly in Nigeria.

With regards to gender distribution, male preponderance was observed in the five consecutive years of the study in a male: female ratio of 1.25:1. This figure is quite similar to a study conducted in the same which had a male: female ratio of 1.21:1.<sup>7</sup> The similarity in result could be attributed to same study area, the larger male population in Nigeria and socio- economic imbalance between both sexes.

The average period of hospital stay for all geriatric cases is 21 days. This is quite low when compared to 85 days and 87 days in studies carried out in USA.<sup>9</sup> This discrepancy is possible due to few bed spaces and ineffective rehabilitation services in our centre, hence patients are discharge home to continue on outpatient basis after the acute phase of management. Period of stay was noticed to be highest for fractures with an average of 68 days.

This is not peculiar to the elderly since bone healing is prolonged in adults and elderly patients are prone to osteoporosis. On the outcome of hospitalization we observed that majority of patients 85.6% were discharged home, 2.1% signed against medical advice and 10.4% died in the cause of management. Previous study conducted in the same centre showed 75.38% of

discharged cases, 2.45% signed against medical advice and 27.34% died in the cause of care.

Whereas our study cuts across all the departments of the hospital, the previous study concentrated on just the medical department of the hospital hence the difference in outcome

A total of 130 deaths of the elderly population were recorded over the 5 years period. CVD complicating DM and hypertension, malignancies, other complications of DM and CCF accounted for the majority of death; that is 60.3% of the mortality in the hospitalized elderly.

These causes were inclusive in 1987 study in USA which attributed 86.3% of all dead to seven major conditions including diseases of the heart, neoplasm, CVD, diabetes and renal pathology.

In England and Wales as at 1970, diseases of the circulatory system and neoplasm were recorded as the main causes of death.<sup>10</sup> A slight deviant of these findings conducted in Switzerland attributed 42.9% of deaths to bronchopneumonia and 47.7% of death to neoplasm and diseases of the circulatory system.<sup>10</sup>

Neoplasm and circulatory system disease are constant features in all regions as a common cause of death among the elderly. This probably due to the transitional epidemiological pattern of disease ( parasitic and infections still prevalent but non communicable diseases associated with modern life style and aging population is increasing). Differences are also observed and this is due to underreporting and misdiagnosis.

### Conclusion

The older population constitutes 8% of the general population worldwide, while in Nigeria it is estimated that about 0.2% are 78 years and above.<sup>11</sup> In the study the elderly made 8.95% of the total admissions, this percentage of admitted elderly patients is bound to increase hence there is need to re-evaluate the health care and social services available at present for the elderly.

More studies in geriatrics in our environment and provision of nursing homes for the elderly as well as promotion of active aging will boost the future of the elderly.

### Recommendation

Based on the results of the study it is important Geriatrics should be established as a medical specialty incorporating a multi disciplinary approach. Education

and training of general practitioners and physicians specializing in Internal Medicine as well as other health care workers particularly nurses should have a review of geriatric concepts.

In terms of planning and organization more bed spaces should be provided for the elderly and possibly creation of special wards. Environmental design studies should be encouraged to facilitate the adaption of the elderly to changes in their capabilities and surroundings especially in hospitals and nursing care homes.

There should be health awareness and sensitization in the community focusing on the senior citizens and their care givers of the common causes of hospitalization in the elderly and how to prevent morbidity and mortality as well as promotion of active aging.

The medical community should be encouraged to carry out more research on the elderly population with adequate funding.

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#### **References**

1. '' Definition of Elderly '' [wordnet.princeton.edu/pen/webn](http://wordnet.princeton.edu/pen/webn).assessed 18<sup>th</sup> December, 2006
2. "Definition of the elderly on the web 2006". [www.google.co.uk](http://www.google.co.uk) assessed 1<sup>st</sup> January 2007
3. Michael Swash, Hutchinson's clinical methods 21<sup>st</sup> edition, Harcourt 2002; 396-430
4. Old age- A problem for society as a whole, World Health Organization chronicles 1974,28; 487-494
5. World Press Review of August, United States of America, 1987
6. Procke Hurst J.C; Allen S.C; Geriatric Medicine for students, London Longman; 1987; 25-83
7. Onwuchekwa AC, Asekomeh EG; Geriatric admissions in a developing countries- Experience

from a tertiary centre in Nigeria, Ethn Dis, 2009, 19, 359-62

8. "Prevalence of Dementia and major subtypes in Europe; A collaborative study of population based on cohorts. Neurological Disease in the elderly research group; 2001, 905. Lobo et al [www.pubmed.gov](http://www.pubmed.gov). 18<sup>th</sup> December 2006 10.45a.m
9. "Current Trends of Hospitalization for the leading cause of death among the elderly." Atlanta United States. 1987 weekly November 02, 1990/39(43) 777-779,785 [www.cdc.mmwr](http://www.cdc.mmwr). 8<sup>th</sup> Feb 2007 1.38 pm
10. Wagstaff P, Coaley D; physiotherapy and elderly New South Wales; Gnoom Helm; 1988, 43-45
11. Department for policy Co-ordination Sustainable Developing Division for Social Policy and Development, United Nations Older persons in countries with Economies in Transition United Nations Publication 1994.
12. Dirckx JH; Stedman's Medical Dictionary; 27<sup>th</sup> edition, Lippincott William and Wilkim; 2000

# ASSESSMENT OF PATTERN AND INJURY SEVERITY OF PATIENTS WITH MAXILLOFACIAL INJURIES DUE TO PHYSICAL AGGRESSION IN A NIGERIAN TEACHING HOSPITAL: A RETROSPECTIVE SURVEY

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## **ABSTRACT**

### **AIM:**

*Injuries due to assault are underreported in Nigeria because of medico-legal reasons and there are still some unreported on the aetiology. We conducted a retrospective study on the prevalence, pattern, severity and outcome of maxillofacial injuries due to physical aggression in our centre with the aim of quantifying the severity of the injuries*

*Method: Patients' demographics, site and type of injury, tissue involved as well as presence of associated injuries were recorded. Soft tissue injuries were categorized as contusions, laceration, avulsions, degloving and multiple injuries. The treatment outcome was based on aesthetic appearance of the scars and patients satisfaction.*

### **RESULT:**

*Out of the 425 patients that presented with injuries to the whole body due to physical aggression, 32(7.5%) of them sustained maxillofacial injuries, 22(68.8%) were males and 10 (31.2%) were females. Two cases (6.3%) had both soft and hard tissue injuries while 30(93.7%) cases had only soft tissue injuries. Age range was between 7 and 68 years with mean and standard deviation of  $25.4 \pm (11.6)$  years. There was associated mild to moderate head injury in 10(31.3%) cases and such injuries were considered serious based on the injury severity scores*

### **CONCLUSION:**

*We documented a prevalence of 7.5% of assault from physical aggression with over 30% sustaining serious injuries to brain; other injuries to the maxillofacial soft and hard tissues were mild in 62.6% and 6.2% respectively.*

### **KEYWORDS:**

Physical aggression; injury; severity; head; face; outcome.

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## **INTRODUCTION**

In the developed countries, assault is the leading cause of injuries because of interactions of individuals and involvements in domestic and outdoor activities<sup>1</sup> The situation is however, different in Nigeria and Africa<sup>2,9</sup>. Despite increasing violence from various factors, cases of assault to various parts of the body are highly underreported and worse still are the dearth of reports on maxillofacial injuries due to this aetiology. A prospective report on this subject has been recently published in our centre<sup>2</sup> but it was necessary to

compare such reports with a retrospective analysis which will reflect the trend of this event when our center was located in the heart of the Port Harcourt city. We reviewed the prevalence, pattern, severity and outcome of treatment of maxillofacial injuries due to assault from physical aggression seen in our tertiary centre before the commencement of relocation to the permanent site in 2005. The aim of the study was to quantify the injury severity.

### **Patients and method**

The study was a retrospective study of all patients with maxillofacial injuries due to physical

aggression that presented to the accident and emergency of the University of Port Harcourt Teaching Hospital, Port Harcourt, Rivers State, Nigeria between June 1992 and May 2004. The hospital had a total of 120 bed spaces and it was one of the four federal tertiary health care centres in the South-South geopolitical zone that provided services for patients within and beyond the State.

Ethical approval was obtained from the Ethics and Research committee of the hospital to carry out the study. Information regarding patients' demographics, site and type of injury, presence of bone, head and systemic injuries as well as family/social histories were obtained from the case files from the hospital records and casualty departments.

Soft tissue injuries types were categorized as contusions, lacerations, avulsions, degloving and multiple soft tissue injuries. The sites of the injuries were noted. Severity of head injuries was based on the Glasgow coma scale (GCS) and Injury severity scores (ISS). Abbreviated injury scale was allocated to each associated injury and the top three highest scales were squared and added together for each case to determine the ISS. AIS of 1 is mild, 2 is moderate, 3 is serious and 4 is severe, 5 is critical and 6 is unsurvivable. ISS is between 0 and 75.

The investigations done such as CT scan and plain radiographs (posterior-anterior and oblique lateral views for the lower jaw, occipitontal and true lateral views of the skull for the midface), treatment done and outcome of treatment were also documented. Patients were categorized into two groups; those that sustained soft and hard tissue injuries and those with only soft tissue injuries. The treatment outcome was based on aesthetic appearance of the scars and patients satisfaction. Data obtained was analyzed with SPSS version 16 (Illinois, Chicago) and expressed as simple frequencies and percentages.

## Results

Out of the 425 patients that presented with injuries to the whole body due to assault/physical

aggression in this survey, a total of 32(7.5%) patients presented with maxillofacial injuries within this period of review 22(68.8%) were males and 10 (31.2%) were females. Two cases (6.2%) had both soft and hard tissue injuries while 30(93.8%) cases had only soft tissue injuries **Table 1**. Age range was between 7 and 68years with mean and standard deviation of  $25.4 \pm (11.6)$  years. There was associated head injury in 10 (31.3%). Seven (21.7%) had mild head injury GCS of 12-14 and 3(9.4%) had moderate head injury, GCS of 8-11. There were injuries to other parts of the body or cases with multiple injuries.

Head injuries were due to a blow from the fist or hit with an object, exact number of cases of domestic violence could not be ascertained because most of the patients could not disclose and there were no positive histories on intake of alcohol and hard drugs and no suicidal attempts were reported in this study.

Two (38.1%) had both soft and hard tissue injuries while 30(61.9) cases had only soft tissue injuries (**table 2**). The scalp was involved in 21(65.6%) followed by the cheek, (12.5%). Contusion was present in 24(66.7%) cases with swelling and ecchymosis. There was laceration in 6(18.6%) cases, degloving and avulsion of the lower lip in 2(6.2%) and 1(3.1%) cases respectively. Eighteen (56.3%) patients had laceration in addition to the contusion to the scalp and cheek. Radiological investigations confirmed fractures in the two cases with bone involvement.

Fracture of the mandible was managed by closed reduction and intermaxillary fixation (IMF) for 6weeks while the orbital fracture was managed by conservative means of medications and observation. All lacerations were sutured primarily and undermining when necessary, while contusions were managed by conservative treatment. The cases with avulsed lower lip had reconstruction with skin of the lower lip and undermining of the mucosa, while another case of incomplete avulsion (degloving) had a successful repair of the lip. There were no cases of death in this study. The cases with



mild to moderate head injury with GCS more than 8 recovered with supportive therapy. Twenty (62.6%) patients with only soft tissue injuries had AIS of 1 and injury severity score of 1, 2(6.2%) with bone fractures had AIS of 2 and ISS of 4. Ten (31.3%)

cases had head injury with AIS of 3 and ISS of 9. Outcome of treatment was successful and satisfactory in all the patients.

**Table 1: Distribution of Age and gender of 32 Patients with Maxillofacial trauma from assault**

Age	Male N(%)	Female N(%)	Total N(%)
0-9yrs	1(3.1)	0(0)	1(3.1)
10-19yrs	8(25.0)	2(6.2)	10(31.3)
20-29yrs	9(28.1)	6(18.6)	16(50.0)
30-39yrs	3(9.4)	1(3.1)	4(12.5)
40-49yrs	0(0)	1(3.1)	1(3.1)
50-59yrs	0(0)	0(0)	0(0)
60-69	1(3.1)	0	1(3.1)
<b>Total</b>	<b>22(68.8)</b>	<b>10(31.2)</b>	<b>32(100)</b>

**Table 2: Distribution of hard and soft tissue injuries sustained 32 Patients with Maxillofacial trauma from assault**

Hard tissue	N(%)	Soft tissue	N(%)
Frontal bone	0(0)	Ear	2(6.2)
Nasal bone	0(0)	Scalp	21(65.6)
Mandible	1(3.1)	Eyelid	1(3.1)
Maxilla	0(0)	Salivary gland	0(0)
Orbital	1(3.1)	Lip	3(9.3)
Glabella	0(0)	Nose	0(0)
Zygoma	0(0)	Cheek	4(12.5)
<b>Total</b>	<b>2(6.2)</b>		<b>32(100)</b>

## DISCUSSION

The prevailing economic depression in most African countries has adversely affected the status of many citizens leading to psychosocial imbalance, altered emotions in the society with consequent result to frequent altercations<sup>3</sup>. Injuries sustained to the face, compounds the psychological trauma to the victims. The most common cause of oral and maxillofacial injuries in Nigeria still remains road traffic accident (RTA) but we observed that most cases of assaults are still not presenting to our tertiary centre for fear of medico-legal reasons<sup>4</sup>.

The incidence of such injuries reported in this present study was quite low; a lower figure in the incidence of physical aggression was noticed when compared with our previous study<sup>2</sup>. In this retrospective study, it was 7.5% in contrast to our prospective study when we obtained, 23.0%<sup>2</sup>. It is also in contrast to reports from the South West zone of the country where assault constituted about 21.8%<sup>7</sup>. Olasoji et al.<sup>10</sup> documented a prevalence of 57.1% from the North Eastern part of the country. A study in Tanzania also reported a prevalence of 22.1%<sup>1</sup>. Recently, there are also changing trends in India with assault taking the lead. The lower figure in this retrospective study may reflect a lower number of patients reporting to our tertiary centre due to the initial location of our center within the city, which was in competition of attendance with the State hospital. Also, increased socio-economic activities are reasons attributed to higher incidences in these recent times.

The pattern and severity of injuries sustained from assault are usually different from RTA. In most cases of assault, injuries are not usually multiple, bone involvement is less and head injury are severe in few cases<sup>5,6</sup>. In our study, the head injuries were classified as serious on the Abbreviated Injury Scale.

The peak age incidence of 21-30 years was found in this study and this corroborates our previous study and other studies in literature<sup>8,9</sup>. This is attributable to the quest for economic sustenance in this age group and they are usually involved in violence and criminal activities. Males were more in this study in

comparison with earlier studies<sup>7-10</sup>. Low socioeconomic status and emotional stress from unemployment result in aggression by men who react by assaulting their wives who demand resources for the upkeep of the family. A major limitation was the lack of documentation of the socioeconomic status of the patients or their assailants. Alcohol consumption and hard drugs intake predispose to physical aggression to a large extent, but such relationship was not found in this study as none of our patients declared any use of alcohol or psychoactive drugs<sup>7,11</sup>. However, in a study in Brazil there was a significant relationship between intake of alcohol and assault<sup>12</sup>.

As documented by other studies<sup>7,13</sup> contusion was the most common soft tissue injury in our study and was found in almost 70% of the patients. This is due to the fact that regardless of the object used for assault, there is always an accompanied inflammation and swelling of the subcutaneous tissue injury<sup>14</sup>. In our study, facial lacerations were caused by objects such as fist, bottles and piece of wood.

Scalp injuries were the commonest site for soft tissue and this was similar in pattern to our prospective study; also we recorded cases of associated head injuries in over 30% of the cases with ISS of 9. Dentoalveolar fracture constituted the highest figures in other studies<sup>15-18</sup>. In our study, mandibular and orbital fractures were sustained 6.2% of cases with ISS of 4. They were treated with closed reduction and intermaxillary fixation and supportive therapy respectively

## Conclusion

We recommend that every youth and unemployed in the African countries must be duly targeted from the grassroots and at the three levels of government, education and/or vocational skills must be made compulsory and government/private or corporate partnership schemes should be established and well monitored. The Ghanaian policy of giving stipends to the unemployed and aged should be emulated. Reforms in the power sector and continuous

orientation of engaged youths on effects of insecurity will also help to attract investors and create employment in Africa as a whole. Birth control is essential to check population growth. We documented a prevalence of 7.5% of assault from physical aggression with over 30% sustaining serious injuries to brain; other injuries to the maxillofacial soft and hard tissues were mild in 62.6% and 6.2% respectively with satisfactory treatment outcome. Assault is an increasing cause of trauma in Africa and improved documentation will help us to appreciate the burden and thereby adopt relevant policies/strategies to combat the effects of such injuries. There is need to establish a unit in the National bureau of Statistics that will enforce the report of such cases in all the hospitals across the country. This will further help to strengthen the implications of some predisposing factors.

### Competing Interest

The author declares no conflict of interest with regard to the writing of this article.

### References

1. Chalya PL, Mchembe M, Mabula JB, Kanumba ES, Gilyoma JM. Etiological spectrum, injury characteristics and treatment outcome of maxillofacial injuries in a Tanzanian teaching hospital. *Journal of Trauma Management & Outcomes* 2011, 5:7 doi:10.1186/1752-2897-5-7
2. Akinbami BO, Udeabor SE. An Analysis of Maxillofacial Injuries due to Assault from Non Projectile Weapons in Patients Reporting to the Tertiary Care Hospital in Port Harcourt. *J Trauma Treat* 2013;2:178. doi:10.4172/2167-1222.1000178
3. Telfer MR, Jones GM, Shepherd JP. Trends in the aetiology of maxillofacial fractures in the United Kingdom (1977-1987). *Br J Oral Maxillofac Surg* 1991;29(4):250-255
4. Adeyemo WL, Ladeinde AL, Ogunlewe MO, James O. Trends and characteristics of oral and maxillofacial injuries in Nigeria: A review of the literature. *Head Face Med* 2005;1(7):15
5. Ugboko VI, Odusanya SA, Fagade OO. Maxillofacial fractures in a semi-urban Nigerian teaching hospital. A review of 442 cases. *Int J Oral Maxillofac Surg* 1998;27(4):286-289
6. Olasoji HO, Tahir A, Arotiba GT. Changing picture of facial fractures in northern Nigeria. *Br J Oral Maxillofac Surg* 2002;40(2):140-143
7. Fasola AO, Nyako EA, Obiechina AE, Arotiba JT. Trends in the characteristics of maxillofacial fractures in Nigeria. *J Oral Maxillofac Surg* 2003;61(10):1140-1143
8. Fasola AO, Obiechina AE, Arotiba JT. An audit of midfacial fractures in Ibadan, Nigeria. *Afr J Med Med Sci* 2001;30:183-186
9. Obimakinde OS, Okoje VN, Fasola AO. Pattern of assault-induced oral and maxillofacial injuries in Ado-Ekiti, Nigeria. *Nigeria Journal of surgery* 2012;18 (2):88-91
10. Olasoji HO. Maxillofacial injuries due to assault in Maiduguri, Nigeria. *Trop Doct* 1999;29:106-108
11. Kapoor P, Kalra N. A retrospective analysis of maxillofacial injuries in patients reporting to a tertiary care hospital in East Delhi. *Int J Crit Illn Inj Sci* 2012;2(1):6-10
12. Rodrigues Leles JL, dos Santos EJ, Jorge FD, da Silva ET, Rodrigues Leles C. Risk factors for maxillofacial injuries in a

Brazilian emergency hospital sample. *J. Appl. Oral Sci* 2010;18(1):23-29

13. Sastry SM, Sastry CM, Paul BK, Bain L, Champion HR. Leading causes of facial trauma in the major trauma outcome study. *Plast Reconstr Surg* 1995;95(1):196-197
14. Khan AA. A retrospective study of injuries to the maxillofacial skeleton in Harare, Zimbabwe. *Br J Oral Maxillofac Surg* 1988;26(5):435-439
15. Le BT, Dierk EJ, Ueeck BA, Homer LD, Potter BF. Maxillofacial injuries associated with domestic violence. *J Oral Maxillofac Surg* 2001;59(11):1277-83; discussion 1283-1284
16. Akinbami BO. Etiology and Pathophysiology of maxillofacial trauma. In: Akinbami BO, Akadiri OA, eds; 1<sup>st</sup> ed. Synopsis of management of maxillofacial trauma Rosedog Publishers; Pittsburg PA. 2011: page 2
17. Gassner R, Bosch R, Tuli T, Emshoff R. Prevalence of dental trauma in 6,000 patients with facial injuries: Implications for prevention. *Oral Surg Oral Med Oral Pathol Oral Radiol Endod* 1999;87(1):27-33
18. Gassner R, Tuli T, Hachi O, Rudisch A, Ulmer H. Cranio-maxillofacial trauma: A 10 year review of 9,543 cases with 21,067 injuries. *J Craniomaxillofac Surg* 2003;31(1):51-61

# PREMATURITY IN NEWBORNS IN URBAN AND RURAL GENERAL HOSPITALS IN LAGOS STATE: A COMPARATIVE STUDY

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## ABSTRACT

### BACKGROUND:

*Preterm deliveries occur in millions of pregnancies worldwide and Nigeria has one of the highest numbers of preterm births. They are contributors to childhood mortality, morbidity and complications in later life of the child.*

### AIM:

*This study was aimed at describing and comparing prematurity in newborns in urban and rural health facilities in Lagos state.*

### METHODS:

*It was a descriptive comparative study involving 3 urban and 3 rural hospitals in Lagos State. Data was obtained using interviewer administered questionnaire. Information obtained included mothers' features, weight and morbidity patterns of the newborns.*

### RESULTS:

*Mothers who lacked formal education were more in the rural hospitals than urban hospitals. Preterm babies in urban areas had mothers comparatively older than those in the rural hospitals. Low birth weight occurred in 68.8% of the babies born with 1.9% of them being extreme low birth weight. Illness was diagnosed in 58.8% of the babies with more babies diagnosed in urban than in rural health facilities. However mortality was higher among infants in rural hospitals than those in urban hospitals.*

### CONCLUSION:

*Preterm babies in rural and urban facilities differ in respect to mortality rate and their mothers in terms of educational status. There needs to be further research into prematurity in newborns and assessment of facilities for newborn care in rural areas.*

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## INTRODUCTION

Preterm babies are those born after a shorter gestational age than normal.<sup>1</sup> Preterm babies can be divided into those born between 33-37 weeks as moderate preterm, those between 28-32 weeks as very preterm and those born before 28 weeks as extreme preterm.<sup>2</sup>

Prematurity is a global issue with no part of the world spared. About 5-18% of all births worldwide are considered preterm.<sup>3</sup> The developing world however has a disproportionate percentage of these births with over 60% of preterm births occurring in Africa and South Asia.<sup>3</sup>

The state of newborn health in Nigeria is of great concern as neonatal mortality rate is put at 40/1000 live births with preterm causes contributing about 30% to this rate.<sup>4</sup> Out of the 241,000 deaths that occur of neonates in Nigeria, half are said to be due to preterm causes<sup>5</sup>

Preterm births can be spontaneous when preterm labour occurs unaided or indicated if they occur due to assisted delivery or caesarean section for conditions in the mother or in the child. Several factors have been associated with preterm delivery. Factors that have been associated with preterm delivery include lifestyle factors in the mother,

neighbourhood characteristics, exposures in the environment, treatments for infertility and inherited factors. It has also been associated with reduced socioeconomic conditions and ethnicity where ethnicity is associated with economic disadvantage.<sup>2</sup> Age of mothers, height and previous history of preterm delivery are other maternal factors postulated as important in the occurrence of preterm births.<sup>6</sup>

Preterm infants suffer a wide range of complications.<sup>7</sup> Problems common among preterm infants include apnoea, respiratory distress syndrome, congenital abnormalities, hyperbilirubinaemia resulting in jaundice and retinopathy of prematurity.<sup>8</sup> It also takes its toll on family, community and healthcare resources. The annual economic burden associated with preterm deliveries in the United States is estimated to be about 20 billion dollars.<sup>2</sup>

Despite the public health importance of preterm births, there is paucity of data on conditions of premature infants and even fewer on those born in rural areas. It is important to compare rural and urban preterm neonates as it has been postulated that rural-urban differences influence the outcomes of preterm births.<sup>9</sup>

The aim of this study was to describe and compare preterm neonates in urban and rural general hospitals in Lagos State.

## **METHODOLOGY**

The study took place in Lagos State, one of the states with the largest population in Nigeria.<sup>10</sup> There are 18 public urban General Hospitals and six rural general hospitals in Lagos. It was a comparative cross sectional study. The study population consisted of premature infants in 3 urban and 3 rural General Hospitals in Lagos State. A total of 154 babies were part of the study, 69 in rural hospitals and 85 in urban General Hospitals respectively. Participant hospitals were selected by simple random sampling. Participants were

purposively recruited into the study until sample size was attained. Data collection tool consisted of a questionnaire. Questionnaire was pretested at a separate General Hospital from those used for the study.

Ethical approval was obtained from the Research and Ethics committee of the Lagos University Teaching Hospital. Consent was obtained from the mothers of the neonates.

Information obtained included age, marital status, and religion of mothers. Status of weight and medical conditions of neonates were also obtained. Statistical analysis was done using Epi-Info and Win-Pepi.

## **RESULTS**

Of the 154 babies studied, 5.8% (9) of them were born to mothers less than 20 years and the average age of the mothers was 29+/-5. Mothers of 85.7%(132) of the babies were married. There was no significant difference between the marital status of the urban and rural mothers. In 7.1% (11) of the cases the mothers had no formal education with a significantly higher proportion of these being in the rural than in the urban areas.

Overall 45% (66) of the preterm infants were male while 55% (82) were female. However there were more male offspring born preterm in the rural hospitals and more females born preterm in the urban hospitals.

The babies were categorized by their weights into extreme low birth weight, very low birth weight, moderate low birth weight and normal weight. The normal weight babies constituted 31.2% (48) of the total babies born preterm. ELBW babies accounted for 1.9% (3), 26% (40) were VLBW and 40.9%(63) MLBW.

Preterm babies born to urban mothers were more significantly diagnosed with illness and admitted than rural babies. Overall the most common diagnosis was prematurity. Rural preterm infants

had higher diagnosis of respiratory illness and sepsis than urban babies. Urban preterm babies had more diagnosis than those found in rural areas. At the time of the study, 11% (17) of the babies had

experienced mortality. Higher rate of mortality was found in the preterm babies in the rural hospital than in those in the urban hospitals.

**Table 1: Demographic Characteristics of mothers of the preterm babies**

Variables	Urban Freq.(%)	Rural Freq.(%)	Total Freq.(%)	Chi- square	
<b>Age</b>					
20yrs and less	5(5.9)	4(5.8)	9(5.8)	<b>X<sup>2</sup></b>	3.246
21 – 30yrs	38(44.7)	37(53.6)	75(48.7)	<b>Df</b>	3
31 – 40yrs	38(40.0)	27(37.9)	65(39.1)	<b>P-value</b>	0.829
Above 40yrs	4(4.7)	1(1.4)	5(3.2)		
<b>Total</b>	<b>85(100.0)</b>	<b>69(100.0)</b>	<b>154(100.0)</b>		
<b>Marital Status</b>					
Single	10(11.8)	8(11.6)	18(11.7)	<b>X<sup>2</sup></b>	1.393
Married	73(85.9)	59(85.5)	132(85.7)	<b>Df</b>	3
Divorced	1(1.2)	2(2.9)	3(1.9)	<b>P-value</b>	0.8385*
Widowed	1(1.2)	0(0.0)	1(0.6)		
<b>Total</b>	<b>85(100.0)</b>	<b>69(100.0)</b>	<b>154(100.0)</b>		
<b>Education</b>					
No formal education	2(2.4)	9(13.0)	11(7.1)	<b>X<sup>2</sup></b>	6.732
Primary education	8(9.4)	6(8.7)	14(9.1)	<b>Df</b>	3
Secondary education	43(50.6)	29(42.0)	72(46.8)	<b>P-value</b>	0.0846*
Tertiary education	32(37.6)	25(36.2)	57(37.0)		
<b>Total</b>	<b>85(100.0)</b>	<b>69(100.0)</b>	<b>154(100.0)</b>		
<b>Religion</b>					
Christianity	55(64.7)	49(82.6)	112(72.7)	<b>X<sup>2</sup></b>	6.378
Islam	30(35.3)	11(15.9)	41(26.6)	<b>Df</b>	2
Traditional	0(0.0)	1(1.4)	1(0.6)	<b>P-value</b>	0.0250*2
<b>Total</b>	<b>85(100.0)</b>	<b>69(100.0)</b>	<b>154(100.0)</b>		
<b>Ethnicity</b>					
Yoruba	50(58.8)	40(58.0)	90(58.4)	<b>X<sup>2</sup></b>	0.122
Igbo	12(14.1)	9(13.0)	21(13.6)	<b>Df</b>	3
Hausa	3(3.5)	3(4.3)	6(3.9)	<b>P-value</b>	1.000*
Others	20(23.5)	17(24.6)	37(24.0)		
<b>Total</b>	<b>85(100.0)</b>	<b>69(100.0)</b>	<b>154(100.0)</b>		

**Table 2: Characteristics of preterm newborns**

	Urban Freq.(%)	Rural Freq.(%)	Total Freq.(%)		
<b>Sex</b>					
Male	28(33.3)	38(58.5)	66(44.3)	<b>X<sup>2</sup></b>	9.81
Female	55(65.5)	27(41.5)	82(55.0)	<b>Df</b>	2
<b>Total</b>	<b>84(100.0)</b>	<b>65(100.0)</b>	<b>149(100.0)</b>	<b>P-value</b>	0.007
<b>Birth weight</b>					
1(ELBW)	1(1.2)	2(2.9)	3(1.9)	<b>X<sup>2</sup></b>	4.095
2(VLBW)	27(31.8)	13(18.8)	40(26.0)	<b>Df</b>	3
3(MLBW)	34(40.0)	29(42.0)	63(40.9)	<b>P-value</b>	0.227*
4norma weight	23(27.0)	25(36.3)	48(31.2)		
<b>Total</b>	<b>85(100.0)</b>	<b>69(100.0)</b>	<b>154(100.0)</b>		
<b>Was child ill</b>					
Yes	55(64.7)	35(50.7)	90(58.4)	<b>X<sup>2</sup></b>	7.27
No	30(35.3)	34(49.3)	70(41.6)	<b>Df</b>	1
<b>Total</b>	<b>85(100.0)</b>	<b>69(100.0)</b>	<b>154(100.0)</b>	<b>P-value</b>	0.013*
<b>If ill was</b>					
Child treated and sent home	1(1.8)	8(22.9)	9(10.0)	<b>X<sup>2</sup></b>	28.682
Admitted and treated	53(96.4)	20(57.1)	73(81.1)	<b>Df</b>	3
Treated at home	1(1.8)	0(0.0)	1(1.1)	<b>P-value</b>	<0.001
No need for treatment	0(0.0)	7(20.0)	7(7.8)		
<b>Total</b>	<b>55(100.0)</b>	<b>35(100.0)</b>	<b>90(100.0)</b>		
<b>Type of illness</b>					
Birth Asphyxia/ Respiratory	6(10.9)	15(42.9)	21(20.8)	<b>X<sup>2</sup></b>	19.172
Jaundice	17(30.9)	1(2.9)	18(20.0)	<b>Df</b>	4
Prematurity low birth weight	29(52.7)	15(42.9)	44(48.9)	<b>P-value</b>	<0.001
Sepsis / Fever	3(5.5)	(11.4)4	7(7.8)		
<b>Total</b>	<b>55(100.0)</b>	<b>35(100.0)</b>	<b>90(100.0)</b>		
<b>State of child</b>					
Alive and well	56(65.9)	44(63.8)	100(65)	<b>X<sup>2</sup></b>	8.087
Alive and ill	25(29.4)	12(17.4)	37(24)	<b>df</b>	2
Departed	4(4.7)	13(18.8)	17(11.0)	<b>P-value</b>	0.018
<b>Total</b>	<b>85(100.0)</b>	<b>69(100.0)</b>	<b>154(100.0)</b>		



## DISCUSSION

The most important issue concerning preterm birth is its impact on neonatal outcomes. In this study, the proportion of infants with birth weight more than 2.5kg was 31.2%(48). This means that 68.8%(106) of preterm babies involved in this study were low birth weight. This percentage is higher than the national average of babies born in Nigeria as low birth weight which is estimated to be 14%.<sup>5</sup> This suggests that preterm births is associated with occurrence of low birth weight in Nigeria.

The common clinical conditions found in the preterm babies in this study are jaundice, prematurity, sepsis and respiratory problems. Respiratory conditions were commonest in rural and prematurity the commonest diagnosis in urban hospitals. A case control study in United Kingdom gave the most common clinical conditions found in preterm babies as jaundice, hypoglycaemia, respiratory distress syndrome and hypothermia.<sup>13</sup> A study done in India gave common complications in preterm neonates as respiratory distress syndrome, jaundice, sepsis and necrotizing enterocolitis.<sup>14</sup> A study done in Ghana had the most common clinical conditions as prematurity and respiratory illness.<sup>15</sup> There are thus similar conditions affecting premature babies in this study as have been documented in other parts of the world.

The total percentage of preterm babies diagnosed as ill was 54%. This is comparable to a study done in Ghana that estimated that 57.1% of preterm infants were admitted with varying conditions.<sup>15</sup> This suggest that more than half of preterm babies are likely to be ill. This implies great costs to health institutions and families due to the relative high cost of treating preterm infants. This portends that there may be a diversion of funds in the country to treating preterm infants and implies dire consequences for funding of preventive measures which are more cost effective.

In this study a total of 11% of the preterm babies experienced mortality. This was found to be in 18.8% and 4.7% of the babies born in rural and urban hospitals respectively. There was thus a significantly higher mortality rate in rural born

compared with urban born preterm babies. This may not be unconnected with the likelihood that there is relative lack of facilities for care of preterm babies in rural hospitals compared with urban hospitals. These values are similar to those found in a study in Australia that found a higher rate of mortality of preterm infants in rural compared with urban areas (15.3% versus 13.4%).<sup>16</sup> This may suggest that generally urban preterm infants experience lower mortality rates than rural preterm infants but this needs more studies for conclusion to be reached.

The overall rate is lower than estimates from a study in Ghana (265.9 deaths per 1000 births).<sup>15</sup> It is however higher than that found in a study in United kingdom with 2.4 deaths per 1000 births.<sup>17</sup> This lower mortality rate may be due not just to better facilities for neonatal care but the probably better socioeconomic status in United Kingdom compared with Nigeria.

Global estimates for mortality in preterm births has been given as 1 million deaths in 15 million births which translates to 6.67%.<sup>3</sup> The difference between the global estimates and the statistics from this study may be due to the fact that the global estimates include developed countries who do not only have a lower incidence of preterm births but more facilities, personnel and funding for care of preterm infants.

Age and other sociodemographic factors are among factors considered in association with preterm deliveries. Extremes of age were found to be associated with preterm deliveries. The mothers aged less than 20 years old were about 5.85% of the respondents and approximately equal proportions in respondents in urban and rural hospitals.

These values were less than that obtained in a study done in Calabar that gave proportions of those under 20 years as 12%.<sup>19</sup> This low level of teenagers in this study may not be a true reflection of preterm deliveries among teenagers but rather that stigma and other factors may hinder use of hospitals.

This higher level in Calabar may be due to the fact that the study was carried out in a tertiary institution located in an urban area where teenagers will seek

care more than in a rural area because of better access and awareness. Tertiary hospitals may also have more teenagers delivering due to referrals. This agrees with a study done in Australia that found rural mothers more likely to be teenagers when compared to their urban counterparts and more mature mothers in the urban.<sup>17</sup>

Mothers lacking formal education were about 7% of the respondents. The proportions in rural hospital attending respondents at 13% were much higher than those in urban at less than 3%. This low level of formal education among women who delivered in rural hospitals is truly reflective of the educational status of women in rural areas in Lagos and bodes ponderous public health implications. Poor maternal educational status is associated with poor health indices.<sup>1</sup>

The implication of the mortality rate in this is profound if it reflects the situation in Nigeria generally. It means that millennium developmental goal 4 (reduce child mortality) needs more work to be done if it is to be achievable. It also has implications for MDG 5 (improve maternal health) as women who have lost a child may try to compensate by getting another one and thus putting their health at risk through increasing parity.

## CONCLUSION

Mothers of preterm babies in urban general hospitals are more likely to be older than those in rural areas. Those in rural areas were more likely to lack formal education than those in urban areas.

Rural preterm babies though less likely to be diagnosed with illness than urban preterm neonates experienced higher rates of mortality. Prematurity was the most frequently diagnosed condition in preterm babies.

The need to discourage women from having children at extremes of age to reduce preterm delivery should be considered. Formal education may need improvement among rural women. More research needs to be done on gaps in diagnosis and mortality among preterm babies in urban and rural general hospitals.

## REFERENCES

1. Parks K 2005 Preventive Medicine in Obstetrics, Paediatrics and Geriatrics in; Park's Textbook of Preventive and Social Medicine Bhanot publishers pg 395-397
2. Behrman R E, Butler A S. Chapter 2 Preterm Birth- Causes, Consequences and Prevention. Institute of Medicine (US) Committee on Understanding Premature Birth and Assuring Health Outcomes. National Academy Press 2007. @www.ncbi.nlm.gov/books/NBK2:372-385 accessed may 2012
3. WHO Born too Soon: the Global Action Report on Preterm Birth. March of Dimes, PMNCH, Save the children, WHO 2012 Pg 4-12.
4. Black RE, Cousens S, Johnson HL, Lawn J E, Rugan J, Bassani D G, et al. Global, Regional, and National Causes of child mortality in 2008: a systematic analysis. Lancet 2010 375:1969-87.
5. FMOH Saving Newborn Lives in Nigeria: Newborn Health in context of Integrated Maternal, Newborn and Child Health Strategy. 2011 pg 57-72.
6. Beta J, Akoler R, Ventura W, Syngelais A, Nicholaides K H. Prediction of Spontaneous Preterm Delivery from Maternal factors, Obstetric History and Placental Perfusion and Function at 11-13 weeks. Prenatal Diagnosis 2011; 3; 75-83.
7. Shah P M. Newborn Health around the Globe in; Banerjee S R Textbook of Community and Social Pediatrics Jaypee publishers 2008 pg 1-10.
8. Grisaru-Granovsky S, Reichman B, Lerner-Geva L, et al. Mortality and morbidity in preterm small-for-gestational-age infants: a population-based study. Am J Obstet Gynecol 2012; 206:150.e1-7.
9. Peck J, Alexander K. Maternal, infant and Child health in Rural Areas. New England Journal of Medicine. 1985 (11) 312; 80-90

10. The Official Website of Lagos State@.www.lagosstate.gov.ng accessed 26 may 2012.
  11. The official website of Lagos State Ministry of Health @.lagosstate ministryof health.com. accessed 26 may 2012.
  12. Hennekens C H, Buring J E Magrent S. Julie E. Buring, Epidemiology in Medicine Lippincort Williams and Williams 1987 - chapter 10 pg261
  13. Wei Y, Duffner A, Hunt L P, Sellers S M, Bernal A L. Analysis of Preterm Deliveries below 35 Weeks Gestation in a Referral Hospital in UK. 2010 BMC Research notes 3:119.
  14. Roy K K, Banah J, Kumar S, Malhotra N, Deoran A K, Sharma J B Maternal Antenatal Profile and immediate neonatal outcome in VLBW and ELBW. Indian Journal of Paediatrics 2006 aug.73(8)669-73.
  15. Roy K K, Banah J, Kumar S, Malhotra N, Deoran A K, Sharma J B Maternal Antenatal Profile and immediate neonatal outcome in VLBW and ELBW. Indian Journal of Paediatrics 2006 aug.73(8)669-73.
  16. Nyekyor K, Enwenu-larya C, Boafor T. Singleton Preterm Birth in Korle-Bu Teaching Hospital, Ghana Origins and Outcomes. Ghana Journal of Medicine 2006 40(3) 93-98.
  17. Abdul-Latif M E, Bajuk B, Vincent T, Sutton L, Lui K. Does Rural or Urban Residence make a difference to Neonatal Outcome in Premature Birth? A regional study. Archive of Disease in Children Fetal-Neonatal 2006 july 91(4) F251-F256.
  18. Smith LK, Draper ES, Manktelow NB, Field DJ. Socioeconomic Inequalities in Survival and Provision of Neonatal Care: Population Based Study of Very Preterm Infants. BMJ 2009 (bmj.)4704.
- Etuk S J, Etuk I S,Oyo-Ita A E. Factors influencing the Incidence of Preterm birth in Calabar, Nigeria. Nigerian Journal of Physiological Sciences 2005 20(1-2) 65-68.

# NEGLECTED HUGE RECTAL PROLAPSE IN IMMUNOCOMPROMISED: the place for Thiersch.

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## ABSTRACT:

### Background:

*Rectal prolapse is not an uncommon condition in an immunocompromised individual. It occurs when all or part of the rectum protrudes through the anal canal. It is often a distressing condition to patients and relatives. The place of Thiersch wiring is to be emphasized as well as review of literature.*

### Aim:

*This is to report a case of huge rectal prolapse in an immunocompromised individual and emphasize the place of Thiersch wiring.*

### Case Report:

*A 49 year old business man presented with complaints of anal protrusion of 3 days duration. It has been recurring especially during defaecation and reducible spontaneously for the past 10 years until 3 days prior to presentation when it became irreducible. He had no bleeding per rectum. It was painless, with nocturia, frequency and polyuria. There was a prior history of lifting of a heavy log of wood. There were unsuccessful attempts at reduction in a peripheral center.*

*Examination revealed a middle aged man with stable vital signs but with a huge mass in the rectum. An emergency reduction and thiersch procedure was done under regional anaesthesia. Procedure was well tolerated. His outpatient follow up has been uneventful.*

### Conclusion:

*Thiersch wiring repair has a place in immunocompromised especially where minimal procedure is best due to patients survival and surgeons safety.*

**Key words:** *Rectal prolapse, immunocompromised, Thiersch wiring.*

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## INTRODUCTION:

Rectal prolapse, described as early as 1500 BC, had three different clinical entities often combined under the umbrella term rectal prolapse viz: Full-thickness rectal prolapsed, mucosal prolapsed and Internal prolapse also called internal intussusception.

Rectal prolapse occurs when a mucosal or full-thickness layer of rectal tissue protrudes through the anal orifice<sup>1</sup>. There are associated problems such as fecal incontinence, constipation, and rectal ulceration which are common.

Full-thickness rectal prolapse is defined as protrusion of the full thickness of the rectal wall through the anus. This is the most commonly recognized type. Mucosal prolapse, in contrast, is defined as protrusion of only the rectal mucosa (not the entire wall) from the anus.

Internal intussusception may be a full-thickness or a partial rectal wall disorder, but the prolapsed tissue does not pass beyond the anal canal and does not pass out of the anus.

### Case report.

A 49 year old business man presented with complaints of anal protrusion of 3 days duration. It has been recurring especially during defaecation and reducible spontaneously for the past 10 years until 3 days prior to presentation when it became irreducible. He had no bleeding per rectum. It was painless, with nocturia, frequency and polyuria but no respiratory symptoms. There was a prior history of weight lifting of a heavy log of wood.

Since onset of symptoms, he had received several herbal medications but to no avail. There were unsuccessful attempts at reduction in a peripheral center. He is a known asthmatic on a salbutamol inhaler. He was not a known hypertensive or diabetic. He had no drug allergies. He is single and he has no family history of hypertension or diabetes mellitus. He uses alcoholic beverages and takes tobacco products.

On examination, he was a middle aged man, weak, not dehydrated, not pale, afebrile (37.1 °c). There were no peripheral lymphadenopathy and no pedal oedema. Blood pressure was 120/90 mmHg. Abdomen was full, moved with respiration and there was no organomegaly. Rectal examination revealed huge erythematous mass protruding from the anal canal. It was oedematous. A clinical diagnosis was rectal prolapse.



Fig 1. Full thickness rectal prolapse prior to reduction.

#### DISCUSSION:

There are two main theories, which essentially are different ways of expressing the same idea regarding the pathophysiology of rectal prolapse. The exact mechanism is not completely understood or agreed upon. The first theory postulates that rectal prolapse is a

Results of investigation showed a complete blood count within normal limits, serology for HIV was positive but HBsAg and HCV antibody were negative and VDRL was Non –reactive. His serum electrolyte, urea and creatinine were within normal limits. Abdominal ultra sound scan showed an essentially normal study.

He had daily dressing with normal saline soaked gauze was placed on intravenous normal saline 1litre 8 hourly for 24hours ,Intravenous ceftriaxone 1g daily and intravenous metronidazole 500mg 8 hourly and Intramuscular pentazocine 30mg 6hourly for 24 hours.

After few days on admission, an emergency reduction and Thiersch procedure was done under regional anaesthesia. Procedure was well tolerated. (Fig 1-11). His outpatient follow up has been uneventful.



Fig 2. After Thiersch, immediate post op.

sliding hernia through a defect in the pelvic fascia. The second theory holds that rectal prolapse starts as a circumferential internal intussusception of the rectum beginning 6-8 cm proximal to the anal verge. With time and straining, this progresses to full-thickness rectal prolapse, though some patients never progress beyond

this stage<sup>2</sup>. The pathophysiology and etiology of mucosal prolapse most likely differ from those of full-thickness rectal prolapse and internal intussusceptions<sup>2</sup>. Mucosal prolapse occurs when the connective tissue attachments of the rectal mucosa are loosened and stretched, thus allowing the tissue to prolapse through the anus. This often occurs as a continuation of long-standing hemorrhoidal disease and is treated as such.

Often, rectal prolapse begins with an internal prolapse of the anterior rectal wall and progresses to full prolapse. The precise cause of rectal prolapse is not defined; however, a number of associated abnormalities have been found. As many as 50% of prolapse cases are caused by chronic straining with defecation and constipation<sup>2</sup>. Other predisposing conditions include pregnancy, previous surgery, diarrhea, benign prostatic hypertrophy, chronic obstructive pulmonary disease (COPD), cystic fibrosis, pertussis (ie, whooping cough), pelvic floor dysfunction, parasitic infections – Amebiasis, schistosomiasis, neurologic disorders - Previous lower back or pelvic trauma/lumbar disk disease, cauda equina syndrome, spinal tumors, multiple sclerosis, disordered defecation (eg, stool withholding)

Certain anatomic features found during surgery for rectal prolapse are common to most patients. These features include a patulous or weak anal sphincter with levator diastasis, deep anterior Douglas cul-de-sac, poor posterior rectal fixation with a long rectal mesentery, and redundant rectosigmoid. Whether these anatomic features are the cause or result of the prolapsing rectum is not known<sup>3</sup>. Rectal prolapse is uncommon; however, the true incidence is unknown because of underreporting, especially in the elderly population. Peaks in occurrence are noted in the fourth and seventh decades of life, and most patients (80-90%) are women.

The annual incidence of rectal prolapse in Finland was found to be 2.5 per 100,000 population<sup>4</sup>. In the adult population, the male-to-female ratio is 1:6. Although in adults women account for 80-90% of cases, in the pediatric population, incidence of rectal prolapse is evenly distributed between males and females.<sup>5</sup>

Untreated rectal prolapse can lead to incarceration and strangulation (rare). More commonly, increasing difficulties with rectal bleeding (usually minor), ulceration, and incontinence occur. Postoperative mortality is low, but the recurrence rate can be as high as 15%, regardless of the operative procedure performed. The most common postoperative complications involve bleeding and dehiscence at the anastomosis. Other complications include mucosal ulceration and necrosis of the rectal wall. Operative complications are higher for abdominal operations, with a lower recurrence rate; the

opposite is true for perineal operations, which have a much lower complication rate but a higher recurrence rate.

Contraindications to surgical correction of rectal prolapse are based on the patient's comorbidities and his or her ability to tolerate surgery. Surgical treatments can be divided into two categories according to the approach used to repair the rectal prolapse: abdominal procedures and perineal procedures. The choice between an abdominal procedure and a perineal procedure is mainly dictated by the patient's age and comorbidities<sup>6,7,8</sup>

On the whole, the abdominal procedures have a lower recurrence rate but a higher morbidity. Accordingly, older, debilitated patients (whose life expectancy is shorter) are generally treated with perineal procedures, whereas younger, healthier patients are typically treated with abdominal procedures. It should be noted, however, that many surgeons with copious experience and low recurrence rates also advocate perineal procedures for their younger, healthier patients. The choice of procedure is also dictated by the presence or absence of constipation. Children are treated with linear cauterization. Surgical therapy for internal prolapse is usually avoided because results are poor, with durable relief of symptoms occurring in fewer than 50% of patients. Regardless of the type of procedure being planned, full mechanical and antibiotic bowel preparation should be carried out before surgery. Intravenous (IV) antibiotics should always be administered preoperatively; if a foreign material is being implanted, postoperative administration of antibiotics may also be considered.

In a study of the long-term outcome of Altemeier perineal rectosigmoidectomy, Altomare et al reviewed the medical records of 93 patients and concluded that this operation is relatively safe and effective in frail, older patients, with postoperative morbidity being low.<sup>9</sup> However, the recurrence rate after the procedure was not negligible, and the operation was found to be unpredictable in terms of restoring continence. Recurrences can be treated with a repeat Altemeier procedure.

In a study of 32 patients with external rectal prolapse, Hetzer et al concluded that perineal stapled prolapse resection is a fast and effective treatment for this condition.<sup>10</sup> The operation, as performed in the study, involved pulling out the prolapse completely and—at 3 and 9 o'clock, in lithotomy position—axially cutting it open with a linear stapler. Resection was performed with a curved Contour Transtar stapler.

The investigators reported no intraoperative

complications, though two patients experienced minor postoperative complications. 10 Median surgical time and hospital stay were 30 minutes and 5 days, respectively. At follow-up (median, 6 months), at which time data was available for 31 patients, 90% of cohort members no longer had the severe fecal incontinence that had existed preoperatively, with the cohort's median Wexner score dropping from 16 to 1. No new cases of constipation were reported to have developed.

Tschuor et al studied nine patients who underwent perineal stapled prolapse resection from 2007-2011. They concluded that although the procedure is fast and safe, the long-term functional outcome was poor, and the recurrence rate was 44%.<sup>11</sup>

In our patient, we noted that the minimal invasiveness of the procedure, helped reduced the post operative morbidity. Also intra-operative time and anaesthetic load on the patient was drastically reduced. This aided recovery and rehabilitation. It also reduced risk to the patient.

#### CONCLUSION:

Thiersch repair has a place in immunocompromised especially where minimal procedure is expected. This will reduce metabolic response to trauma and hence aid patients survival.

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#### REFERENCES.

1. Gourgiotis S, Baratsis S. Rectal prolapse. *Int J Colorectal Dis.* Mar 2007;22(3):231-243.
2. Wijffels NA, Collinson R, Cunningham C, Lindsey I. What is the natural history of internal rectal prolapse?. *Colorectal Dis.* Aug 2010;12(8):822-830.
3. Harmston C, Jones OM, Cunningham C, Lindsey I. The relationship between internal rectal prolapse and internal anal sphincter function. *Colorectal Dis.* Jul 2011;13(7):791-5.
4. Kairaluoma MV, Kellokumpu IH. Epidemiologic aspects of complete rectal prolapse. *Scand J Surg.* 2005;94(3):207-210.
5. Hotouras A, Murphy J, Boyle DJ, Allison M, Williams NS, Chan CL. Assessment of female patients with rectal intussusception and prolapse: is this a progressive spectrum

- of disease?. *Dis Colon Rectum.* Jun 2013;56(6):780-785. .
6. Kosba Y, Elshazly WG, Abd El Maksoud W. Posterior sagittal approach for mesh rectopexy as a management of complete rectal in adults. *Int J Colorectal Dis.* Jul 2010;25(7):881-886.
7. Gurland B, Garrett KA, Firoozi F, Goldman HB. Transvaginal sacrospinous rectopexy: initial clinical experience. *Tech Coloproctol.* Jun 2010;14(2):169-173.
8. Senapati A, Gray RG, Middleton LJ, Harding J, Hills RK, Armitage NC, et al. PROSPER: a randomised comparison of surgical treatments for rectal prolapse. *Colorectal Dis.* Mar 5 2013;
9. Altomare DF, Binda G, Ganio E, De Nardi P, Giamundo P, Pescatori M. Long-term outcome of Altemeier's procedure for rectal prolapse. *Dis Colon Rectum.* Apr 2009;52(4):698-703
10. Hetzer FH, Roushan AH, Wolf K, Beutner U, Borovicka J, Lange J, et al. Functional outcome after perineal stapled prolapse resection for external rectal prolapse. *BMC Surg.* Mar 8 2010;10:9.
11. Tschuor C, Limani P, Nocito A, Dindo D, Clavien PA, Hahnloser D. Perineal stapled prolapse resection for external rectal prolapse: is it worthwhile in the long-term?. *Tech Coloproctol.* Apr 24 2013

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