

## Original Article

### Lateral rhinotomy-a review of 38 operations from Sokoto Nigeria

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#### Abstract

**Aims And Objectives:** Intranasal tumours are likely to be incompletely excised if pernasal excisional biopsy alone is used. There are several other approaches for the removal of intranasal tumours one of which is lateral rhinotomy. This paper reviews 38 lateral rhinotomies performed in 30 patients in Sokoto Nigeria, over a 4<sup>1/2</sup> year period.

**Patients And Method:** The record of 30 patients who underwent 38 lateral rhinotomies in Sokoto were reviewed. The indications for lateral rhinotomy, operative findings and histology results were analysed over a 4<sup>1/2</sup> year period.

**Results:** 38 lateral rhinotomies were performed in 30 patients. There were 19 males (63.3%) and 11 females (36.7%) with a male to female ratio of 1.7:1. Their ages ranged between 6yrs and 65yrs. 29 patients (96.7%) had 37 lateral rhinotomies performed on them as a result of intranasal neoplasm while one (3.3%) had lateral rhinotomy performed for removal of local Arrow foreign body in the orbit and infratemporal fossa. Operative findings indicated that in only 8 surgeries (21.1%) were intranasal tumours confined to the nasal cavities, while in 27 surgeries (76.3%) intranasal tumour had extended beyond the nasal cavity.

**Conclusion:** Lateral rhinotomy provides excellent exposure to intranasal tumours more than all other approaches in achieving tumour free margin during excisional biopsy pending the outcome of histology report with acceptable cosmetic results.

**Keywords:** Lateral rhinotomy, Intranasal tumours.

#### Introduction

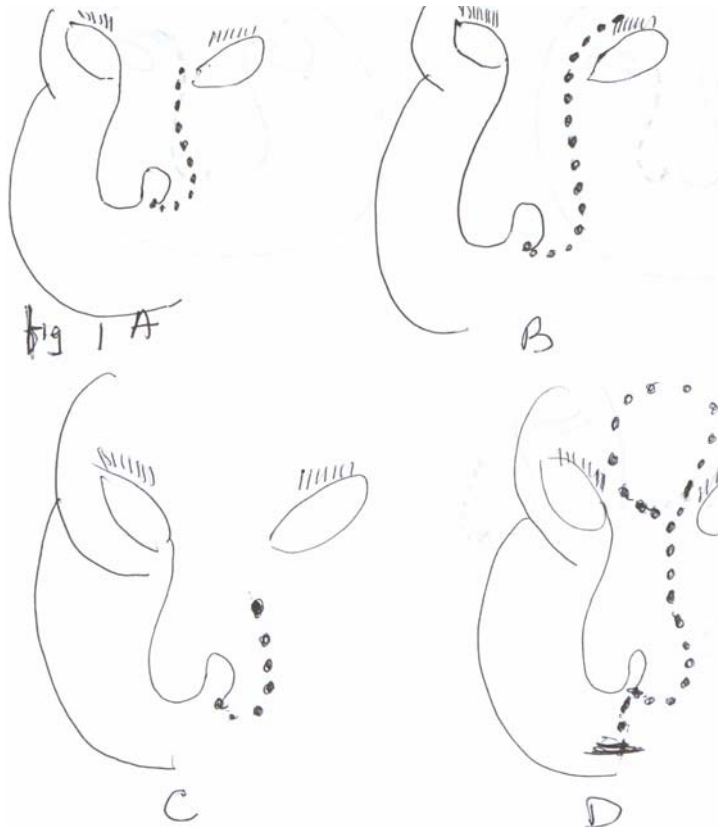
Intranasal tumours may present both diagnostic and therapeutic problems. This is because not all intranasal tumours are confined only to the nasal cavities. There may be more extensive spread beyond the boundaries of the nasal cavities, which makes complete excision of the tumour through the nares with adequate margins free of the disease virtually impossible<sup>1</sup>. This usually leaves behind variable but significant tumour tissue with high rate of recurrence leading to repeated nasal operations causing unpalatable sometimes disgusting experiences to patients. In a developing nation like Nigeria, most of these patients are poor and are exploited by medical quacks who offer them “cheaper” and regrettable services. When such patients manage to get to an otolaryngologist, it is most desirable that an approach

which is all encompassing is used to excise any tumour tissue with adequate margin free of the disease and achieve nasal patency pending the determination of histological diagnosis. Different surgical approaches such as transnasal, transpalatal, transantral, sublabial, external rhinoplastic, anterior rhinotomy and lateral rhinotomy have been used to gain access to and excision of tumours and have been found to have certain advantages and disadvantages<sup>1-8</sup>. Lateral rhinotomy offers an excellent approach to achieve the objective of adequate tumour clearance with adequate margin free of disease at one sitting<sup>1-8</sup>. This paper is a review of 38 lateral rhinotomies performed by one surgeon from October 1999-April 2004 (4<sup>1/2</sup> years).

#### Surgical Technique.

Lateral rhinotomy was first described by Michaux in 1848 but was popularised by Moure in 1902<sup>1-5</sup>. The classical lateral rhinotomy described by Moure lies halfway between the medial canthus and the nasal dorsum extending from the inner margin of the eyebrow down along the nasomaxillary groove curving around the ala to enter into the nose as shown in figure 1A<sup>1-5</sup>. Other modifications of this incision can be done depending on the size and extent of the tumour such as figures 1B, 1C&1D. Standard medial and lateral osteotomies of the nasal bones, ethmoidal

and frontal bones are routinely used to provide better visualisation of intranasal, antral, ethmoidal, frontal, sphenoidal sinuses and the nasopharynx<sup>1-8</sup>. When the lateral nasal wall is partially or completely removed, and the lacrimal apparatus has been cut across, it is advisable to carry out a dacryocystorhinostomy to prevent stenosis of the nasolacrimal duct and obstruction which will result in recurrent or persistent epiphora. The extent of the surgery is usually determined by clinical examination and preoperative radiological assessment of the nose and paranasal

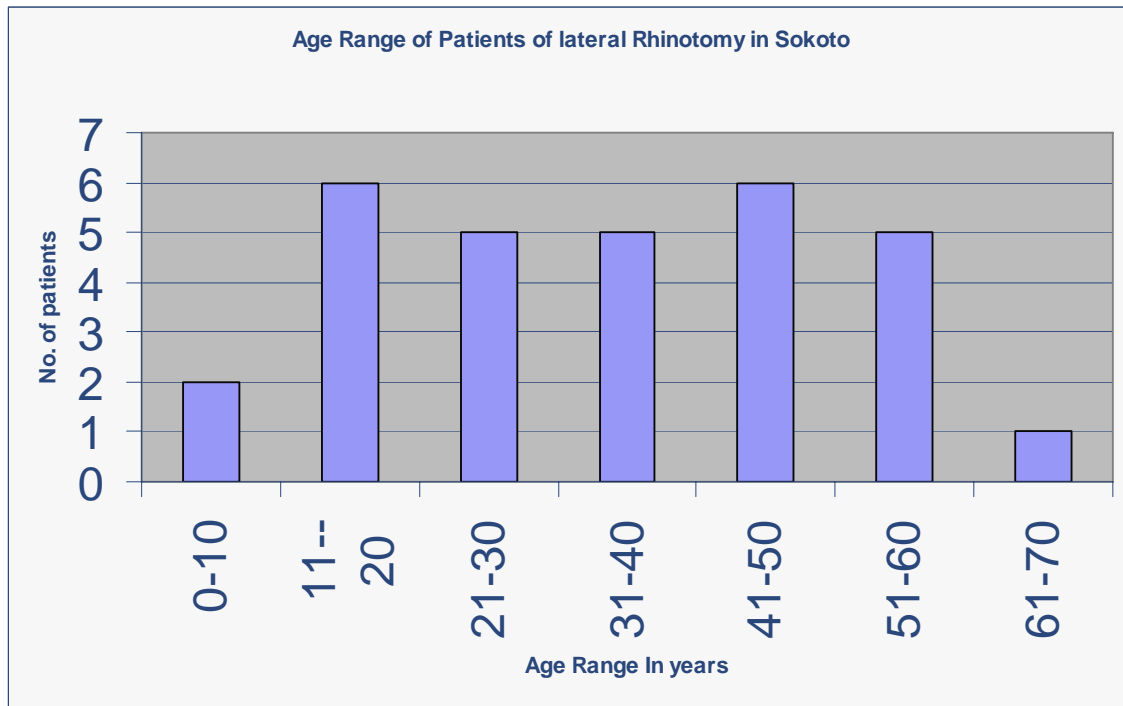


. sinuses

### Materials And Method

The records of 30 patients who had 38 lateral rhinotomies in Sokoto were reviewed. Indications of lateral rhinotomy, operative findings and histology results were studied. Patients who had clear clinical symptoms and signs of Nasopharyngeal carcinoma, or more extensive disease the will involve more extensive surgery more than what could be achieved through a lateral rhinotomy were excluded. Each patient had a plain X-ray of the nose, and paranasal sinuses. Computerised tomographic(CT) scan was done in selected situations where the disease was more complex for plain x-rays alone to show. Routine haematological(full blood count), serum electrolytes, urea and creatinine, retroviral screening and urinalysis were done on all patients. **Results** Thirty-eight lateral

rhinotomies were performed in 30 patients. There were 19 males and 11 females with a male to female ratio of 1.7:1. Their ages ranged from 6- 65yrs. The main indications for surgery were nasal mass causing nasal obstruction in 37 surgeries (97.2%) while one (2.8%) was due to penetrating arrow head injury of the orbit and infratemporal fossa(Table I). All 29 patients (96.6%) with nasal masses had previous pernasal attempt of nasal clearance prior to presentation. The operative findings showed the nasal mass to have extended beyond the confines of the nasal cavity in 26(68.4%) operations(Table II). The histology report for the 29cases of tumour was benign in 21(72.4%) cases but malignant in 8(27.6%) cases (Table III)



**Fig. II: Showing the Age Range Of Patients Of Lateral rhinotomy**

**Table I: Preoperative Indications For Lateral Rhinotomy**

Indications	No (%)
1.Nasal mass with complete nasal obstruction with or without facial asymmetry and radiological evidence of more than one sinus involvement	7 (96.7%)
2.Penetrating Arrow Foreign body of right frontal sinus/orbit	1 (3.3%)
	38 (100%)

**Table II: Operative findings**

Operative findings	No(%)
(1) Extensive nasal mass involving the nasal cavity, ethmoids, antrum,nasopharynx, oropharynx.	26(68.4%)
(2) Nasal mass confined within the nasal cavity only	8(21.1%)
(3) Spheno- ethmoido- nasal mucocele	2(5.3%)
(4) Dentigyrus cyst of the right maxilla (along the lateral nasal wall).	1(2.6%)
(5) Penetrating Arrow injury of the Orbit and infratemporal fossa.	1(2.6%)
<b>Total</b>	<b>38(100%)</b>

**Table III: Histological Appearance**

Malignant	No	Benign	No
Squamous cell carcinoma	2	Inflammatory polyp	8
Melanoma	2	Inverted papilloma	5
Nasopharyngeal carcinoma	1	Neurofibroma	3
Plasmacytoma	1	Angiofibroma	2
Large cell immunoblastic Lymphoma	1	Mucocoele	2
Olfactory neuroblastoma	1	Pyogenic granuloma	1
<b>Total</b>	<b>8</b>		<b>21</b>

**Fig IV A Preop and B, post-op rhinotomy****Fig V CT-scan sphenothmoido-Nasal Mucocoele Rhinotomy was done.**

**Discussion** Intranasal tumours or masses commonly present with nasal obstruction, rhinorrhoea, epistaxis and facial asymmetry when there is spread beyond the confines of the nasal cavities to the contiguous tissues. Most tumours of the nasal cavity that are of long standing are usually more extensive than what one could see through anterior and posterior rhinoscopy if they are large and obstruct the view, thus preventing the examiner from determining accurately the extent of the disease and the site of origin of the tumour. Pernal excisional biopsy or clearance of such intranasal tumours should not be routinely done because it will lead to incomplete excision without adequate exposure of the origin of the tumour and the extent of spread<sup>1-4</sup>. In this series, operative findings in 27 surgeries (93%) showed nasal tumours to be extensive involving the nasal cavity, antrum, ethmoids, nasopharynx with or without the oropharynx, (table II) and only 8 patients had masses confined to the nasal cavities. It is no wonder that most of these patients who had previous pernasal surgeries had recurrence as adequate exposure could not be achieved through the pernasal approach. Lateral rhinotomy allows visualisation of the site of origin, the extent of spread to other contiguous region, and excision of the tumour with

adequate margins<sup>1-8</sup>. Wider surgical excision of the lesion including medial maxillectomy, ethmoidectomy, exposure of the cribriform plate, frontal sinus, sphenoidal sinus, maxillary antrum and access to the pterygopalatine fossa etc, can be accomplished through the same incision, with modifications and extensions (figs 1A,B,C,D). In the same patient with recurrence, and in young children lateral rhinotomy can be employed with cosmetically acceptable results<sup>1,4-5</sup>. In this study, one patient had a repeat surgery for recurrence and children between six and fourteen years old had lateral rhinotomy employed on them, while 9 patients had bilateral lateral rhinotomies with acceptable cosmetic results (figure 4). The histological diagnosis in 8 patients (27.6%) were malignant, while 21 (72.1%) were benign. Appropriate referral to a radiotherapy centre was given to all the malignant cases for further treatment. Every excised mass must always be subjected to histology report. However incisional biopsies can be carried out in very extensive extranasal tumours with clinical evidence of locoregional spread or distant metastasis suggestive of malignancy. Mention also must be made of intranasal polypectomies routinely carried out for nasal polyps and use of steroids<sup>9-13</sup>. When this fails to achieve the

desirable results, with no facilities for functional endoscopic sinus surgery (FESS), and further need for repeated intranasal surgery, lateral rhinotomy can be employed with acceptable cosmetic results. Lateral rhinotomy with modifications could be employed in

and in the removal of extensive sphenoido-nasoantral mucocoeles with excellent results (Figure 6)

### Conclusion

Lateral rhinotomy approach to intranasal tumours provides excellent exposure to the nasal cavity,

exploration and removal of penetrating foreign bodies of the frontal sinuses, orbit, ethmoids, nose, antrum, pterygopalatine fossa (see Figure 5)

maxillary antrum, ethmoidal labyrinth, nasopharynx, sphenoidal sinus and the frontal sinus. It is invaluable in achieving complete tumour clearance as it allows adequate access to the sites and extensions of the tumour particularly those of long standing duration and exploration and removal of foreign bodies with acceptable cosmetic results.

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