ORIGINAL RESEARCH PAPER

Volume-6 | Issue-11 | November-2017 | ISSN No 2277 - 8179 | IF : 4.176 | IC Value : 78.46

INTERNATIONAL JOURNAL OF SCIENTIFIC RESEARCH

A COMPARATIVE STUDY BETWEEN FESS AND CONVENTIONAL SURGICAL PROCEDURE OF THE PATIENTS WITH ANTROCHOANAL POLYP.

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ABSTRACT

Objective: Our study was to compare the FESS and conventional surgical procedure for the management of antrochoanal polyp. Methodology: A detail assessment and clinical examinations were taken to all 100 patients with antrochoanal polyp. And surgical procedure was applied. Results: Data was analyzed by using simple statistical methods with the help of MS-Office software. Conclusions: FESS (Functional Endoscopic Sinus Surgery) was better choice than other conventional surgical procedure(simple polypectomy and Caldwell-Luc operation) for the management of patients with antrochoanal polyp.

KEYWORDS

Antrochoanal polyp, FESS, Conventional surgical procedure

Introduction:

Paranasal sinuses are air filled spaces present within some bones around the nasal cavities. The sinuses, are frontal, maxillary, sphenoidal and ethmoidal. All of them open into nasal cavity through its lateral wall. The function of sinuses is to make the skull lighter and add resonance to voice. In infection of sinuses or sinusitis, the voice becomes altered.[1,10]

Nasal polyps are abnormal lesions that emanates from any portion of the nasal mucosa or paranasal sinuses. Polyps are an end result of varying disease processes in the nasal cavitites. The most commonly discussed polyps are benign semitransparent nasal lesions that arise from the mucosa of the nasal cavity or from one or more of the paranasal sinuses, often at the outflow tract of the sinuses.[2]

Multiple polyps can occur in children with chronic sinusitis, allergic rhinitis, cystic fibrosis (CF), or allergic fungal sinusitis (AFS). An individual polyp could be an antralchoanal polyp, a benign massive polyp, or any of a number of benign or malignant tumors (eg, encephaloceles, gliomas, hemangiomas, papillomas, juvenile, nasopharyngeal, angiofibromas, rhabdomyosarcoma, lymphoma, neuroblastoma, sarcoma, chordoma, nasopharyngeal carcinoma, inverting papilloma). Evaluate all children with benign multiple nasal polyposis for CF and asthma. Nasal polyps are of two types, ethmoidal polyp and antrochoanal polyp.[3]

Pathogenesis of nasal polyposis is unknown. Polyp development has been linked to chronic inflammation, autonomic nervous system dysfunction and genetic predisposition. Some condiotons associatred with multiple benign polyps. Theses are bronchial asthma (20-50% of patients with polyps), CF- polyps in 6-48% of patients , allergic rhinitis, AFS- polyps in 85% of patients with AFS, chronic rhinosinusitis, primary ciliary dyskinesis, aspirin intolerance (8-26%), alcohol intolerance (50%), churg – strauss syndrome (50%), young syndrome, nonallergic rhinitis with eosinophilia syndrome (NARES)-nasal polyps in 20% of patients with NARES. In united states overall incidence of nasal polyps in children is 0.1%, incidence in children with CF is 6-48%. Overall incidence in adult is 1-4%, with a range 0.2-28%. No significant mortality is sassociated with nasal polyposis. Morbidity from polyps is directly related to their location and size. It occurs in all races. Male to female ratio is 2-4:1 in adults.[4,5,6] Larsen et al (1997) were found that majority of patients, after surgical removal of their polyps, had better control of their asthma.[7] Molnar and Gamore et al (2000) were found an association with HLA DR7 and said when patients had these genes they had a two to three times higher risk to develop nasal polyps.l8] Aim of our study was to compared the conventional sinus surgical procedure and FESS (Functional Endoscopic Sinus Surgery) proceduure for the management of patients with antrochoanal polyp.

Materials and Methods:

A total of 100 patients with age group 01 to 50 years, associated with positive clinical findings of nose and oral cavity. The entire subject/attendants signed an informed consent approved by institutional ethical committee of Vardhman Institute of Medical Science, Pawapuri, Bihar, India was sought. Data was collected on the basis of inclusion and exclusion criteria, with irrespective of sex in OPD or the ward, of department of Ear Nose and Throat, VIMS, Pawapuri, Bihar during period of March 2016 to December 2016.

Materials:

Patients were selected by random sampling. A details assessment were performed like present history, past history, personal history, social and family history. Past history was noted in detail with special reference to previous attacks of nasal discharge, respiratory tract infection or chest infection and allergy.

Local examination of nose was done with nasal speculum and oral cavity with tongue depressor. Patients were investigated thoroughly with relevant pathological and radiological examinations for the purpose of diagnosis.

Patients were taken with detail assessment, like as: name, age, sex, religion, address, registration number, date of admission, date of discharge, presenting complaints, history of present illness, history of past illness, personal history, family history, surgical history, obstetric history, history of drug illness and history of upper respiratory tract infection. General examination were performed by examine: pulse, blood pressure, pallor, icterus, cyanosis, lymphadenopathy, examination of external nose, examination of vestibule, anterior rhinoscopy, posterior rhinoscopy and functional examination of nose for air way and smell. Examination of polyp were performed by inspection as: number, site, shape, colour of ephithelium of nose, direction of polyp, and by palpation as: number, site, shape, tenderness, bleed on touch, septum, turbinate and discharge in nasal cavity. Examination of oral cavity were performed by examine as: lip, buccal mucosa, gum and teeth, hard palate, anterior 2/3rd of tongue, floor of mouth and retromolar trigon. Examination of oropharynx were performed by examine as: tonsil and pillar, soft palate, base o0f tongue and posterior pharyngeal wall.

Examination of ear were performed by as: pinna and surrounding area, external auditory canal, tympanic membrane, middle ear, mastoid, Eustachian tube and facial nerve. Systemic examination were performed by as chest, cardiovascular system, P/A and central nervous system. Investigation were done as routine investigation, X-ray P.N.S. O-M views, C.T. Scan of nose and paranasal sinus. And then medical and surgical management were done as per need.

Statistical Analysis:

Data was analyzed by using of simple statistical method with the help of MS-Office software.

Observations:

A total of 100 patients with polyp studied by radiological investigations with clinical findings were taken from the department of

Ear, Nose and Throat, VIMS, Pawapuri. 1 to 50 years age group patients were included.

Table.1. Age group and percentage of patient with polyp

Age group in years	No. of patients	Percentage
1 to 10	28	28
11 to 20	32	32
21 to 30	16	16
31 to 40	16	16
41 to 50	8	8
Total	100	100

In this present study, 28(28%) patients were in age group 1 to 10 years. 32(32%) patients were in age group 11 to 20 years. 16(16%) patients were in age group 21-30 years. 16(16%) patients were in age group 31-40 years. And 8(8%) patients were in age group of 41 to 50 years.

Table. 2. Age group and gender of patients with polyp

Age group	Male		Female	
	No. of patients	Percentage	No. of patients	Percentage
1 to 10	16	16	12	12
11 to 20	18	18	14	14
21 to 30	8	8	8	8
31 to 40	8	8	8	8
41 to 50	4	4	4	4
Total	54	54	46	46

16(16%) male and 12(12%) female patients were belong with age group of 1 to 10 years. 18(18%) male and 14(14%) female patients were with age group of 11 to 20 years. 8(8%) male and 8(8%) female patients were with age group of 21 to 30 years. 8(8%) male and 8(8%) female patients were with age group of 31 to 40 years. 4(4%) male and 4(4%) female patients were with age group of 41 to 50 years. There were total 54(54%) male and 46(46%) female.

Table. 4. Site of nasal cavity of patients with polyp.

Site of nasal cavity	No. of patients	Percentage
Right nasal cavity	40	40
Left nasal cavity	60	60
Total	100	100

There were 40(40%) patients with right nasal cavity polyp and 60(60%) patients with left nasal cavity polyp.

Table. 5. Symptoms associated of patients with polyp.

Symptoms	No. of patients	Percentage
Nasal obstruction	28	28
Purulent rhinorrhea	16	16
Epistaxis	16	16
Clear rhinorrhea	9	9
Facial pain	8	8
Snoring	8	8
Headache	5	5
Sneezing	5	5
Dysphagia	5	5

28(28%) patients were come with the symptoms of nasal obstruction. 16(16%) patients were with purulent rhinorrhhoea. 16(16%) patients were with epistaxis. 9(9%) patients were with clear rhinorrhoea. 8(8%) patients were with facial pain. 8(8%) patients were with snoring. 5(5%) patients were with headache. 5(5%) patients were with sneezing. And 5(5%) patients were come with dysphagia.

Table.6. Clinical features of patients with polyp.

Features	No of patients	Percentage
External nasal deformity	8	8
Vestibular erosin/ulcer	8	8
Inferior turbinate hypertrophy	30	30
Pus in middle meatus	40	40
Post natal drip	10	10
DNS	20	20

In this study, on the basis of radiological finding, 8(8%) patients were with features of external nasal deformity. 8(8%) patients were with vestibular erosion/ulcer. 30(30%) patients were with features of inferior turbinate hypertrophy. 40(40%) patients were with pus in middle meatus. 10(10%) patients were with features of post natal drip. And 20(20%) patients were with DNS. Some features were associated with other features.

Table.7. Grade of capacity of patients with polyp on the basis of radiological findings

Grade of capacity	No. of patients	Percentage
1	0	0
2	20	20
3	60	60
4	20	20
Total	100	100

There was no patient with grade 1 polyp. 20(20%) patients were with grade 2 polyp. 60(60%) patients were with grade 3. And 20(20%) patients were with grade 4 polyp.

Table.8. conservative management of patients with polyp

Treatment given	Respond to treatment	Not respond to treatment
Oral cortico steroid and nasal cortico steroid spray	70(70%)	30(30%)
Percentage	70	30

When the conservative management were done to the patients. 70(70%) patients were with responds to oral corticosteroid and nasal cortico steroid spray. And 30(30%) patients were with not respond to conservative management.

Table.9. Surgical procedure of patients with polyp

Type of surgery	No. of surgery	Recurrence	Percentage
Simple polypectomy	40	10	25
Caldwell-Luc	40	6	15
FESS	20	2	10

There were 40 patients undergo for simple polypectomy surgical procedure. In which 10(25%) patients were shown recurrence of polyp. 40 patients were undergone Caldwell-Luc surgical procedure, in which 6(15%) patients were recurred of polyp. And 20 patients were undergone FESS surgical procedure, in which 2(10%) patients were shown recurrence.

Discussion:

This study was conducted at department of ENT, VIMS, Pawapuri, Patna. We were studied on 100 patients with antrochoanal polyp. In our study, the patients were reported that the total duration of their illness as far as period varying between 1 to 3 years. The total duration of illness as reported by the patients has little significance either in the diagnosis or in the management of antrochoanal polyp which is largely dependent on the clinical and pathological assessment of particular cases.

Our findings, majority of antrochoanal polyp was recorded in age group of 11 to 20 years. 54(54%) male and 46(46%) female were suffered from antrochoanal polyp. Here males were more sufferer than females. Nasal obstruction and nasal discharge were the main presenting symptoms of antrochoanal polyp.

Many patients, in this study often failed to state precisely the exact time period of their suffering and tried to give a rough idea. Repeated attack of acute rhinosinusitis was common in the patients with antrochoanal polyp. 50% of patients had family history of allergy. 50% patients were some form of allergy whereas, no definite history could be elicited from the rest. It was established that allergy predisposes chronic and development of polyp.

In our study, antrochoanal polyp was slight common in lower socioeconomic classes. It was probably due to because of they had not received any primary treatment and repeated attack of infection.

Ulcers in the vestibule were visualized in 8% patients and external deformity also in 8 % probably these were mere coincidences rather than of any etiological significance.

In this present study, reveals that external nasal deformity was 8%. X-ray of the paranasal sinuses was normal translucency of maxillary sinus and had no opacity in grade 1. 20(20%) patients had opacity in grade 2, 60(60%) patients had opacity in grade 3 and 20(20%) patients had opacity in grade 4.

70(70%) were medically treated as a result, size of polyp was decrease. While 30(30%) patients were not responds to medical treatment. Hence, majority of patients were relieved by conservative treatment with the using of corticosteroid.

Van Camp (1994) were studied 23 patients, they were prescribed oral steroids. As a result 72 % patients were relieved of symptoms.[9]

In our study, when surgical procedure was performed. 10 (25%) patients out of 20 were recurred polyp by simple polypectomy surgical procedure. In Caldwell-Luc surgical procedure, 6(15%) patients out of 20 patients were recurred polyp. In FESS procedure 2(10%) patients out of 10 was recurred polyp. That mean, our study was shown that, FESS (Functional endoscopic sinus surgery) was the better choice of surgical procedure than other type of conventional surgical procedure.

Hence, this study shown the incidence of antrochoanal polyp was common in younger age group. Maximum number of patients were present in age group of 11 to 20 years. And disease was gradually decrease with advancement of age. This disease was slightly male predominance and slightly common in lower socioeconomic classes because of initial negligence and repeated infection. The history of allergy of patients was 52%. No significant family history was observed in majority of patients. Majority of patients were past history of repeated attack of cold and nasal discharge. Duration of illness was ranged from 1 to 3 years. Nasal obstruction, nasal discharge, headache and heaviness of head had been noted as a common symptoms. Other symptoms had sneezing, epistaxis, snoring and dysphagia. Local examinations were external nasal deformity and vestibular erosion. After through clinical examination, patients were may subjected to endoscopy. Routine blood and urine investigation were performed to diagnose any pathology or advice for surgery. Special test were CT Scan and MRI. Histopathological examination of biopsy material was done to all patients to confirm diagnosis. Conservative treatment were given in the form of antibiotics, antihistaminic, oral cortico steroid, nasal cortico steroid spray. Surgery were done in the form of simple polypectomy, Caldwell-Luc operation and FESS. The recurrent of disease was less in FESS and Caldwell-Luc operation.

Future Research:

Science is dynamic and there is always a scope of improvement and change in time to come ahead. With progressive aim to move ahead we aspire to achieve highly accurate and reliable results. Thus every study leaves back scopes for other researcher to do something more advanced and varied in order to touch the height of perfection. This study examined only 100 subjects (54 males and 46 females), future researchers can expand the study by including more number of subjects so as to make generalization of the results and practice, further studies with a larger sample size and in multiple centers are required. Thus it could be applied to real life situation.

Relevance to clinical practice:

This study is relevant with detail management of antrochoanal polyp. It opens up new possibilities of prevention and management of antrochoanal polyp and makes maintain the good health of population. Such knowledge in future would not only reduce this disease but also have significant medical benefits on the health care systems.

Limitation:

There were several limitations like, the sample size was small, and it was a hospital-based study, the instrumentations and investigations may be different from a different health setup.

Conclusion:

We concluded that FESS (Functional Endoscopic Sinus Surgery) was better choice of surgical procedure than other type of conventional surgical procedure (Simple polypectomy, caldwell-Luc operation) for the management of patients with antrochoanal polyp.

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