Clinical Manifestations of Postnasal Drip

Seung Geun Yeo, M.D.[1], Jung Wook Han, M.D.[1], Hyun Joon Shim, M.D.[1], Sang Won Yoon, M.D.[1], Chang Il Cha, M.D.[2] and Joong Saeng Cho, M.D.[2]

ABSTRACT

Background and Objectives : Postnasal drip is a common presentation to the medical practitioner. It is a result of disturbance to the normal drainage or an increase in secretion of the paranasal sinuses. However, sometimes no underlying cause can be found and the patient has to be reassured, and that they may just have to live with it. The aim of this study is to evaluate the clinical manifestations of patients with postnasal drip. **Material and Method :** There were 90 patients complaining with postnasal drip. We performed a prospective study about accompanying symptoms and physical and psychiatric evaluation. **Conclusion :** Postnasal drip is more common in females over 30 years and the duration of symptoms is usually long. Anatomical nasal abnormality and sinusitis are common. There is no correlation with postnasal drip and psychiatric problems. But several items are concerned with postnasal drip. So we need detailed history taking and physical examination on patients who complained of postnasal drip.

KEY WORDS : Secretion · Paranasal sinuses · Sinusitis.

INTRODUCTION

Postnasal drip is drippings of the nasal secretion to the pharynx through the nasopharynx and it is felt as if something is in the inside of the nasopharynx and consecutive removing movements do not eliminate it. It is caused by an increase of nasal secretion conveyed to the posterior choana because of the proliferation and hypertrophy of secretory cells, a higher viscosity of nasal secretion, and its ineffective removing movement by impaired mucociliary function with paranasal sinusitis or in case of a poor break of nasal secretion caused by its viscosity and elasticity higher than the normal level, hypersensitive perception of the nasopharynx, extrusion of CSF, impaired absorption of expiratory vapor in the old, reflux of mucus from the pharynx to the posterior choana with elevation of the soft palate in velopharyngeal incompetence, and psychologic factors such as anesthesia of the laryngopharynx and so on.[1)] Postnasal drip is one of the most unpleasant symptoms and it also can be caused by psychologic factors such as dysesthesia of the laryngopharynx. Because of that, this symptom is a common presentation in the clinic field but it is one of the symptoms that are difficult to treat. Nevertheless, the systematic research on postnasal drip has not been carried out yet, therefore we carried out this study in order to evaluate the clinical manifestations of patients complaining with postnasal drip.

[1]*Department of Otolaryngology, Eulji University, Eulji Hospital,*
[2]*Department of Otolaryngology, KyungHee University, College of Medicine, Seoul, Korea*
Address Correspondences and reprint requests to Seung Geun Yeo, M.D., Department of Otolaryngology, Eulji University, Eulji hospital, 280-1, Hagye 1 Dong, Nowon Gu, Seoul, 139-711, Korea
Tel : 82-2-970-8276, Fax : 82-2-970-8275
E-mail : ysg4206@eulji.or.kr
Accepted for publication on September 4, 2002

MATERIAL AND METHOD

The subjects of this study were ninety patients who complained with postnasal drip. They were 35 males and 55 females and their age distribution was from five to eighty-one years old. Their average age was 22.5 years old for male and 40.3 years old for female. However, patients with allergic rhinitis or a nasal surgery history were excluded in this case study in order to study men and women without a past history. The method of this study was a prospective study consisting of subjective symptoms and objective examinations. We took a history about nasal obstruction, rhinorrhea, sore throat, foreign body sensation, and headache as

accompanying symptoms of postnasal drip, and examined nasal septal deviation, hypertrophy of inferior concha, hypertrophy of middle concha, hypertrophy of the ethmoidal bulllae, paradoxical middle turbinate, and characteristics and amount of the secretion as a physical examination. And we used questionnaires of simple psychiatric tests made by Kim[2] to inquire whether or not postnasal pain could be affected by psychological factors.

RESULTS

The age distribution of patients with postnasal drip were mostly made up of teenagers regardless of sex, and in the group of over thirties, females were more frequent than males (Table 1). The period that patients complained symptoms of was less than 1 month in 24 cases, less than 6 month in 17 cases and less than 1 year in 9 cases, and 38 cases complained symptoms for a period of more than 5 years (Table 2). Accompanying symptoms were nasal obstruction, rhinorrhea, sore throat, foreign body sensation, headache and sputum, in order. In addition, there were also chest discomfort, nausea, epistaxis, nasal pain and toothache (Table 3). 49 cases had the experience of medical treatment in several hospitals and 41 cases did not. The nasal septum was normal in 30 cases and deviated in 77 cases. The frequency of deviation is the anterior, superior, posterior, and inferior in order. The inferior concha was normal in 35 cases, and in 41 cases, the hypertrophy was so minimal that the middle concha was seen partly

Table 1. Age distribution

Age	Male	Female
~10	3	3
11~20	12	11
21~30	7	8
31~40	4	7
41~50	5	10
51~60	2	8
61~	2	8
Total	35	55

Table 2. Duration of symptom complaint

Duration	Number
~1 week	13
~1 month	11
~6 month	17
~1 year	9
~5 year	20
~10 year	15
10 year ~	3

Table 3. Accompanying symptoms

Symptoms	Number
Nasal obstruction	30
Rhinorrhea	15
Throat discomfort or pain	11
Headache	10
Sputum	4
Chest discomfort	1
Nausea	1
Epistaxis	1
Nasal pain	1
Toothache	1

Table 4. Physical findings of nasal cavity

Septum	
Normal	13 (14.4%)
Deviation	77 (85.6%)
anterior	27
posterior	21
superior	25
inferior	10
Inferior turbinate	
+ completely visible middle turbinate	35 (38.8%)
++ partially visible middle turbinate	41 (45.5%)
+++ no visible middle turbinate	13 (14.4%)

Table 5. Physical findings of middle turbinate and middle meatus

Physical findings		Number
Middle turbinate hypertrophy	(+)	21 (23.3%)
	(-)	69 (76.7%)
Bullar enlargement	(+)	7 (7.7%)
	(-)	83 (92.3%)
Paradoxical middle turbinate	(+)	5 (5.5%)
	(-)	85 (94.5%)

Table 6. Characteristics of rhinorrhea

Characteristics	Number
Viscosity	
Serous	12 (17.8%)
Mucous	40 (54.7%)
Mucopurulent	21 (28.7%)
Amount	
No	17 (18.8%)
Scant	28 (31.1%)
Moderate	33 (36.6%)
Profuse	12 (13.3%)

Table 7. Correlation between physical finding and symptom duration

Physical findings	Symptom duration						
	~1 wk	~1 m	~ 6 m	~1 yr	~5 yr	~10 yr	10 yr~
Septal deviation							
Anterior	3	4	3	1	5	1	
Posterior	1	1	2	1	1	5	
Superior	2	1	5	2	6	1	1
Inferior	1	2	1	2	1	1	
H. of IT							
+	3	2	4	2	4		
++	7	5	6	2	4	4	
+++	1	1	1	4	3	1	
H. of MT	2	4	2		6	1	1
Rhinorrhea							
Viscosity							
Serous	1			1	1		
Mucoid	1	2	1	4	4	1	
Mucopurulent	4	1	2		1	1	
Amount							
Scant	2	1		2	2	2	
Moderate	3	2	2	2			
Profuse		1	1		2	2	

wk : week, m : month, yr : year, H : Hypertrophy, IT : inferior turbinate, MT : middle turbinate

and in 13 cases, the hypertrophy was so severe that the middle concha was not seen at all (Table 4). Findings of the middle concha and nasal cavity were that the middle concha was so hypertrophied that the nasal cavity was not seen in 21 cases, and in 69 cases, the nasal cavity was seen clearly. In 7 cases, the ethmoidal bullae were hypertrophied and in 83 cases they were normal. A paradoxically bent middle turbinate was found in 5 cases and the middle turbinate was normal in 85 cases (Table 5). Characteristics of rhinorrhea was mucoid found in most of 40 cases and in 21 cases it was mucopurulent and serous (Table 6). Its amount was moderate, scanty and not profuse, in order. In radiologic findings, 68 cases accompanied paranasal sinusitis and regarding to the classification by Kennedy,[3] 26 cases were in stage 2, 27 cases in stage 3, 11 cases in stage1 and 4 cases in stage 4. In physical findings, there was no specific relationship between the duration of symptoms and paranasal sinusitis (Table 7, 8). In the psychologic test based on obsessive-convulsive personality, more than 80% of the patients answered 6-point questions positively and 4-point questions negatively (Table 9). Considering that the obsessive-convulsive personality is defined as positive which in case the score is over 24 for male and over 25 for female, 2 females in this study were positive. The average score was 11.6±4.8 for male and 10.9±5.7 for female (Table 10).

Table 8. Correlation between physical finding and sinusitis

Physical finding	Stage I*	II	III	IV
Septal deviation				
Anterior	1	5	6	2
Posterior	1	6	8	
Superior	1	6	9	
Inferior	4	6		
H. of IT				
+	2	9	9	1
++	2	13	10	1
+++	1	2	3	
H. of MT	1	10	10	
Rhinorrhea				
Serous	1	2	1	
Mucoid		6	8	1
Mucopurulent	2	7	2	3
Amount				
Scant	2	7	3	1
Moderate	1	5	5	2
Profuse		3	1	1

H : Hypertrophy, IT : inferior turbinate, MT : middle turbinate.
* : Stage I, II, III, IV according to Kennedy' classification

Table 9. Psychiatric evaluation (obsessive-compulsive disorder)

Questions	Number
I have some problem in memory.	71
I always feel relieved only after checking everything.	71
I may have difficulty to concentrate on.	71
I am poor at making a decision.	70
I feel everything does not go well.	69
I can't get rid of distracting thought.	69
I worry about carelessness.	59
I can't always finish in time in order to work accurately.	55
I always feel empty.	53
I repeat touching, calculating or washing and so on.	30

Table 10. Score of psychiatric evaluation

	male	female
Sum	11.6±4.8	10.9±5.7
T-Score	51.3±7.6	49.0±9.9

DISCUSSION

Postnasal drip is a symptom felt as if something is inside of the nasopharynx, that is not eliminated by consecutive removing movements, which are very unpleasant for the patient. This symptom is easily diagnosed at the clinic but on the other hand is difficult to treat. The subjective symptoms of postnasal drip that patients often complain of can be often in discord with the objective findings by physical examination. These symptoms mainly appear in females in between their twenties and sixties[1] and also in this study, females in their late thirties mostly complained of these symptoms. Accompanying symptoms were nasal obstruction, rhinorrhea, sore throat, foreign body sensation, headache, etc. According to Martin and Arjuna,[4] the causes of postnasal drip in cases of children were allergic rhinitis, adenoid vegetation, paranasal sinusitis, gastric or esophageal reflux, nasal polyp, mucociliary dysfunction and immunocompression and so on, and allergic rhinitis, paranasal sinusitis, nasal polyp, smoking, exposure to pollution, senile rhinitis and atrophic rhinitis and so on in case of adults. In this study, excluding patients with a history of surgery and allergic rhinitis, the remaining patients had paranasal sinusitis in 75%, nasal septal deviation in 86%, hypertrophy of inferior turbinate in 60%, hypertrophy of middle turbinate in 23%, hypertrophy of ethmoidal bullae 7%, and paradoxical bent middle turbinate in 5%, that enables us to come to the conclusion that postnasal drip mainly occurs in patients who have anatomic abnormalities and paranasal sinusitis above a moderate level. And in the psychologic test, it was difficult to find a relationship between postnasal drip and psychologic obsessive-convulsive personality, but more than 80% of the patients complained of memory problems, feeling relief only after checking everything, difficulty in concentrating, poor decision making, pessimistic thoughts and inability to get rid of distracting thoughts which manifest the possibility that psychologic factors may be related to postnasal drip. It is possibly easy to diagnose postnasal drip when rhinorrhea actually flows down from the posterior choana to the pharynx, but sometimes it is hard to do so when patients do not complain of symptoms in spite of postnasal drip findings or in the contrary, when patients complain of symptoms even though there are no postnasal drip findings.[5]

The information about the anatomy of the nasal cavity and presence, amount or nature of rhinorrea can be obtained from the patients who complain of postnasal drip by anterior rhinoscope, posterior rhinoscope or nasal endoscope and so on and about not only the relationship between the anatomical structures and adjacent structures of nasal cavity, paranasal sinus and nasopharynx but also accompaniment of paranasal sinusitis by simple X-ray, CT, MRI and so on. To add to this it is considered that it needs to check if the bacteria of nasal cavity and nasopharynx are the same by microbiologic test. And the study about psychologic factors of intractable postnasal drip should be made because psychologic factors are usually related with postnasal drip.

CONCLUSION

1) In the age distribution, teenagers were the most frequent regardless of sex, and females were more frequent than males over thirties.

2) Nasal obstruction was the most common accompanying symptom and patients commonly complained of it during a long-term period.

3) In physical examination, anterior nasal septal deviation and hypertrophy of the inferior turbinate were common and hypertrophy of the middle turbinate, and ethmoidal bullae and paradoxical middle turbinate were rare. And rhinorrhea was usually mucoid and the amount was moderate.

4) In CT finding, paranasal sinusitis of stage 2 or 3

was common according to Kennedy's classification.

5) There was no relationship between psycologic abnormality and postnasal drip but it is considered that history taking and sufficient observation of the patients is necessary for several questions were related.

REFERENCES

1) Sakakura KH. Clinical viewpoint of postnasal drip. Japanese Journal of Rhinology 1997;36(3):35-8.
2) Kim KI, Kim JH, Won GT. Simple psychologic diagnostic test method. Department of aptitude, Choong Ang publish;1984. p.7-39.
3) Kennedy. Ethmoid sinus surgery. Laryngoscope 1992;102:13-8.
4) Martin F, Arjuna A. The management of postnasal drip. Australian Family Physician 1999;28(3):223-8.
5) Irwin RS, Pratter MR, Holland PS, Corwin RW, Hughes JP. Chest. Postnasal drip causes cough and is associated with reversible upper airway obstruction. 1984;85(3):346-51.