

Bronchial Asthma, Allergic Rhinitis and cholecystectomy: An Observational study.

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Background: Gallbladder has not been associated with any allergic condition what so ever. However, certain patients with bronchial asthma and cholelithiasis have reported to the author improvement in their asthmatic attack after cholecystectomy.

Methods: This was an observational study on 22 bronchial asthma or allergic rhinitis cases that had undergone cholecystectomy. These patients had been followed up from three to nine years. A questionnaire had been filled by the patients as to the frequency of asthmatic or allergic rhinitis attacks and use of medication before and after cholecystectomy at the end of the follow up.

Results: Twenty (90.91%) of the patients showed improvement in the frequency of attacks and eight (36.36%) of the patients had no attacks after the cholecystectomy. Postoperatively, fifteen (68.18%) stopped medication and five (27.73%) decreased use of medication for bronchial asthma or allergic rhinitis.

Conclusion: Dramatic symptomatic improvement followed cholecystectomy in patients with bronchial asthma and allergic rhinitis. Intra-operative and or postoperative drugs or bile concentration cannot bring such a change. Drug effects cannot last the follow up period of 3-9 years and bile concentration cannot affect asthmatic or allergic rhinitis attacks. Therefore the improvement postoperatively can only be explained by removal of the gallbladder. Further studies into this hypothesis are recommended.

Introduction

Bronchial asthma is characterized by a widespread and reversible narrowing of the air passage and clinically by paroxysms of dyspnoea, cough and wheezing which are episodic. 100-150 million people around the world suffer from bronchial asthma¹. In Kenya the prevalence is approaching 20%¹. 4-5% of the United States population is affected by bronchial asthma⁷. Bronchial asthma is classified as allergic asthma and idiosyncratic asthma initiated by multiplicity of stimuli. Urbanization appears to correlate with increase in bronchial asthma. Family history of asthma or allergy is a risk factor. Allergic rhinitis is also a risk factor for bronchial asthma¹⁴. Control and treatment of allergic rhinitis is said to be important in the prevention of bronchial asthma. Bronchial asthma is not associated with any specific organ disease, which controls allergens.

Gallbladder is the organ acting as reservoir to bile and has the function of concentrating the bile from the liver by re-absorption of electrolytes and secretive mucous^{8,9}. Gallbladder has not been associated with any allergic condition what so ever, however, certain patients with bronchial asthma and cholelithiasis have reported to the author improvement in their asthmatic attack after

cholecystectomy. Thus it was decided to follow all patients with bronchial asthma or allergic rhinitis who will undergo cholecystectomy.

Patient and Methods

Twenty-four patients with bronchial asthma and allergic rhinitis were included in the study. Six of the patients had allergic rhinitis. All had cholelithiasis and had been operated in St. Paul's and Hayat hospitals. Two patients were lost to follow-up while twenty-two of them were followed up for three to nine years. A questionnaire that had been specifically prepared for the study was filled by the patient at the end of the follow-up as to the length of their bronchial asthma attack before operation, the frequency of asthmatic attack and use of medication before and after cholecystectomy.

The answer of patient to the questionnaire has been analyzed.

Results

Table 1 Shows age and sex distribution of the patients. Seventeen (77.3%) of the patients were between the ages of 30 and 59. Fifteen (68.2%) of the patients were females while the remaining

7(31.8%) were males. Table 2 shows the number of years the patients had symptoms of bronchial asthma or allergic rhinitis. The duration of symptoms in 13 (59.1%) of the patients ranged between 3 and 10 years.

Four (18.2%) had symptoms for over 10 years while the remaining had symptoms for less than 3 years. Table 3 Shows frequency of bronchial asthma and allergic rhinitis attacks before surgery. Five patients (22.7%) had regular daily attacks of symptoms while 8 (36.4%) had attacks 3 to 4 times a year. Table 4 shows the frequency of bronchial

asthma and allergic rhinitis attacks after operation. Twenty (90.9%) reported improvement in the frequency of bronchial asthma and allergic rhinitis attacks after the cholecystectomy. Of these 8 (36.4%) had no attacks at all after the cholecystectomy, which was a dramatic improvement. Patients used different medication starting from theophedrine to hydrocortisone. Ten (45.5%) used short acting and long acting hydrocortisones. Table 5 shows use of medication after operation. Fifteen (68.2%) stopped using medication after operation during the follow-up period. Five (22.7%) decreased the frequency of use of medication while the rest 2 only had no change at all.

Table 1. Age / Sex Distribution Of 22 Patients

Age (Year)	0-9	10-19	20-29	30-39	40-49	50-59	60-69	Total	%
Male	-	-	-	4	1	2	-	7	31.8
Female	-	-	1	3	3	4	4	15	68.2
Total	-	-	1	7	4	6	4	22	100
Percentage	-	-	4.5	31.8	18.2	27.3	18.2	100	

Table 2. No Of Years With Bronchial Asthma Or Allergic Rhinitis Attacks.

No. Of Yrs	1-2 Yrs	3-5 Yrs	6-10 Yrs	10 Yrs +	Total
No of patients	5	8	5	4	22
Percentage	22.7	36.4	22.7	18.2	100

Table 3. Number Of Attacks per year Before Cholecystectomy

Attacks per Year	1	2	3	4	Daily	Total
No of patients	4	5	6	2	5	22
Percentage	18.2	22.7	27.3	9.1	22.7	100

Table 4. Number of Attacks After Cholecystectomy

No. Of Attacks	None	Decreased No.	No Change	Total
No of patients	8	12	2	22
Percentage	36.4	54.5	9.1	100

Table 5. Use of Medication after Cholecystectomy

Use of Medication	Stopped Medication	Decrease In Use	No Change	Total
No. Of patients	15	5	2	22
Percentage	68.2	22.7	9.1	100

Discussion

This was an observational study on 22 patients who had bronchial asthma or allergic rhinitis with cholelithiasis and had been operated. The study dealt with the status of their symptoms and use of medication after operation. Reflux oesophagitis has been claimed to be associated with bronchial asthma⁵. Children who have been operated by fundoplication showed improvement in 85% of them⁵. It is said that vagal stimulation is responsible for bronchial asthma attack in those patients with reflux oesophagitis.

An article written in Russian indicated that bile-expelling therapy has helped children with dermato-respiratory syndrome². The use of multimodality therapy including the hepatotropic agents turned out fairly effective primarily in children with dyskinesia of the biliary tract². Similarly Nishimura T wrote on the interrelationship between biliary dyskinesia and chronic urticaria, chronic eczema and atopic dermatitis³. These two studies tried to show association of allergy with bile and biliary dyskinesia.

This observational study shows that there is a lot of improvement in the frequency of bronchial asthma or allergic rhinitis attacks and use of relieving medications after cholecystectomy in those patients who had bronchial asthma or allergic rhinitis with cholelithiasis. Twenty (90.91%) of the patients showed improvement in the frequency of attack and fifteen (68.18%) stopped use of relieving medication.

Gallbladder stone is said to be formed because of lithogenic bile from the liver where the proportion of cholesterol, bile salts and lecithin is disturbed. This biochemical explanation by small alone cannot explain the formation of gallbladder stones. The gallbladder itself plays a role in the formation of stone. Dyskinesia (motility disturbance) of the gallbladder is

claimed to play a role in stone formation. During pregnancy motility of the gallbladder decreases and can lead to stone formation. Asthmatic attack is said to be worse during pregnancy⁽⁶⁾. Anesthetic drugs could have short relieving effect on bronchial asthma or allergic rhinitis attacks but can not last the follow-up period of 3 to 9 years.

Bile cannot be a reason for improvement as the bile continues to flow even after cholecystectomy. After removal of the gallbladder one cannot talk of motility or dyskinesia of the gallbladder and the gallbladder removal itself should be a reason for improvement of bronchial asthma or allergic rhinitis attacks. The results raise two questions. Does the gall bladder have anything to do with allergy? If it has anything to do with allergy what is the mechanism? These research questions need to be addressed by other researchers.

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