Tracheobronchial Foreign Bodies Inhalation In Al-Anbar Government

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الأجسام الغريبة في ألرغامي والقصبة الهوائية

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الخلاصة

الخلفية : دخول الأجسام الغريبة في ألرغامي والقصبة ألهوائيه في الأطفال والبالغين يحدث في كافة إنحاء العالم.
الهدف: لمعرفة أنواع الأجسام الغريبة و مكان وجودها وطرق إزالة الأجسام الغريبة من ألرغامي والقصبة الهوائية.
طريقة العمل: دراسة وصفية أجريت على ١٠٠ مريض أحيلوا إلى مستشفى الرمادي التعليمي ومستشفى الفلوجه العام في الفترة الزمنية من كانون الثاني ٢٠٠٨ لغاية كانون الأول ٢٠٠٩ مصاب بوجود أو اشتباه وجود جسم غريب في ألرغامي أو القصبة الهوائية .
النتائج: كان اصغر مريض يبلغ عمره ٥ أشهر وكانت أكثر حالات استنشاق الأجسام الغريبة بين ١-٥ سنوات في٧٠ مصاب بوجود أو اشتباه بوجود جسم غريب في ألرغامي أو القصبة الهوائية وبنسبة متساوية تقريبا بين الإناث والذكور ٥١% و ٤٩% على التوالي ، وكانت الأجسام الغريبة ٢٩% معدنية و٢٨% بذور (فاكهة الرقي والحبوب الأخرى) وكانت الأجسام الغريبة في القصبة الهوائية اليمنى الأعلى بنسبة ٦٧% وكان حب الرقي منها بنسبة ٣٥.٨% في القصبة الهوائية اليمنى وكانت ٣٢% من الحالات لا يوجد اثر في أشعة الصدر، وكانت ٦٤% حالة بدون مضاعفات ما بعد إجراء ناظور القصبات سواء الصلب أو المرن بينما كانت وذمة الحنجرة تشكل ٢٣% من المضاعفات عولجت تحفظيا مع مضاعفات أخرى بنسبة اقل، وكان ناظور القصبات الصلب في ٨٧ حالة و١٥ حالة بواسطة ناظور القصبات المرن. وكان ٧٥ حالة مع تاريخ مرضي باستنشاق جسم غريب و٢٥ حالة بدون تاريخ مرضي واضح باستنشاق جسم غريب.
الاستنتاج والتوصيات:
١. نسبة حدوث استنشاق الأجسام الغريبة في الانبار عالية في الأطفال من البالغين مماثلة لما موجود في باقي إنحاء العراق.
٢. صعوبة رفع الأجسام الغريبة واختلاطات وجود الأجسام الغريبة تزداد بعد ٢٤ ساعة من عدم رفع الأجسام الغريبة.
٣. ناظور القصبات الصلب والمرن كلاهما يمكن أن يكون تشخيصي وعلاجي.
٤. جراحي الصدر هم أفضل من يقوم بإجراء ناظور القصبات الصلب العلاجي ويمكن الاعتماد على أطباء الصدر في إجراء ناظور القصبات المرن التشخيصي.
٥. ناظور القصبات أجراء بسيط وأمن ولكن عند حدوث حادث ممكن أن يودي إلى اختلاطات ربما تودي إلى الموت.
٦. نظريا يمكن منع حدوث استنشاق الأجسام الغريبة بكل بساطة ولكنه شبة مستحيل عمليا.
٧.مسك الطفل ورأسه إلى الأسفل على أمل إن الجسم الغريب يخرج من القصبة الهوائية أجراء خاطئ ربما ينزل الجسم الغريب إلى أسفل المزمار مما يودي إلى الاختناق والموت المفاجئ.
٨. مناورة هملخ يمكن إن تعالج وبنجاح انسداد مجرى التنفس الناتج من انسداد القصبة الهوائية والحنجرة بالأجسام الغريبة.

Abstract

Background:

Aspirated tracheobronchial foreign bodies in infants , children & adults occur throughout the world .

Objective :

To determine the type of foreign bodies , common site , procedure for removal of foreign bodies.

Materials& methods:

This is a descriptive study was done Over a period of 2 years in Al_Anbar government in the period of From January 2008 to December 2009, 100 case were referred to the department of thoracic & cardiovascular surgery of Al-Ramadi teaching hospital & Al-Fallujah General hospital in Al-Anbar government because of suspected aspiration of tracheobronchial foreign bodies. The data collected were included age ,gender , history of foreign bodies inhalation from the patients or from their relatives. In 75 instances, a definite history of foreign body inhalation was obtained & confirmed at bronchoscopic examination, the remaining 25 patients, about whom such information was unobtainable, where treated for some time as if they had a chest infection, at bronchoscopic study, however, a foreign body was found in 15 cases.

Results: The youngest patient was 5 months old ,& the accident was most prevalent in children between the ages of 1-5 Years in 73 patients with or suspected foreign bodies inhalation in trachea or bronchus ,with nearly equal in female & male 51%,49% respectively. Metallic foreign bodies in 29% of cases & seeds in 28% ,67% of foreign bodies arrested at right main bronchus & watermelon in 35.8% in right bronchus .

No radiological finding in 32 % ,& 64% without significant complication with rigid or flexible bronchoscopy, while laryngeal edema in 23% of complication treated conservative.

Rigid bronchoscopy in 87 cases while flexible in 15 cases recently admitted to Al-Fallujha General hospital .

Lastly 75 cases with history of foreign body inhalation & 25 cases with no clear history.

Conclusion & Recommendation:

1. In Al-Anbar as other part of Iraq ,the prevalence of tracheobronchial aspiration of foreign bodies in children is high than adults.
2. The complication rate increases as the time to the diagnosis and extraction of the object exceeds 24 hours.
3. Bronchoscopy (rigid & flexible) can be both diagnostic & therapeutic .
4. Thoracic surgeons are familiar with both techniques , the rigid & the flexible types in diagnosis & therapy ,while chest physicians are allowed to practice flexible bronchoscopy for diagnostic procedure .
5. Bronchoscopy is a simple & safe procedure but when an accident occur ,serious complication may arise with devastating rapidity .
6. Theoretically ,the prevention of foreign bodies is simple ; in practice ,it is almost impossible .
7. Holding an infant's head downwards in the hope that it will come out should never be attempted ; for ,if the foreign body is free in trachea or one of the bronchi ,it is then apt to be displaced & become impacted in subglottic region resulting in asphyxia & sudden death .
8. Heimlich maneuver, may be successfully treated in acute choking, with respiratory failure associated with tracheal or laryngeal foreign body obstruction.

Key words : Foreign body ,inhalation, AL-Anbar, Iraq .

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Introduction:

Foreign body aspiration can be a life-threatening emergency. An aspirated solid or semisolid object may lodge in the larynx or trachea. If the object is large enough to cause nearly complete obstruction of the airway, asphyxia may rapidly cause death. Lesser degrees of obstruction or passage of the obstructive object beyond the carina can result in less severe signs and symptoms.

Chronic debilitating symptoms with recurrent infections might occur with delayed extraction, or the patient may remain asymptomatic. The actual aspiration event can usually be identified. The aspirated object might even escape detection. Most often, the aspirated object is food, but a broad spectrum of aspirated items has been documented, commonly retrieved objects include seeds, nuts, bone fragments, nails, small toys, coins, pins, medical instrument fragments, and dental appliances.

Near-total obstruction of the larynx or trachea can cause immediate asphyxia and death. Should the object pass beyond the carina, its location would depend on the patient's age and physical position at the time of the aspiration. Because the angles made by the mainstem bronchi with the trachea are identical until age 15 years, foreign bodies are found on either side with equal frequency in persons in this age group. [1] With normal growth and development, the adult right and left mainstem bronchi diverge from the trachea with very different angles, with the right mainstem bronchus being more acute and therefore making a relatively straight path from larynx to bronchus. Objects that descend beyond the trachea are more often found in the right endobronchial tree than in the left.

The object itself might cause obstruction. Vegetable material may swell over hours or days, worsening the obstruction. Cough, wheeze, stridor, dyspnea, cyanosis, and even asphyxia might ensue. Organic foreign bodies, such as oily nuts (commonly peanuts), induce inflammation and edema.

Local inflammation, edema, cellular infiltration, ulceration, and granulation tissue formation may contribute to airway obstruction while making bronchoscopic identification and removal of the object more difficult. The airway becomes more likely to bleed with manipulation; the object is more likely to be obscured and becomes more difficult to dislodge. Mediastinitis or tracheoesophageal fistulas may result. Distal to the obstruction, air trapping may occur, leading to local emphysema, atelectasis, hypoxic vasoconstriction, postobstructive pneumonia, and the possibility of volume loss, necrotizing pneumonia or abscess, suppurative pneumonia, or bronchiectasis.

Bronchoscopically, the object may appear as a tumor. Even if the object is removed, the inflammatory changes may not be completely reversible. Some investigators believe scar carcinoma may develop over time. The likelihood of complications increases after 24-48 hours, making expeditious removal of the foreign body imperative.

Many aspirated foreign bodies are unexpectedly discovered, go undetected, or are misdiagnosed. The often-fatal syndrome of acute asphyxiation from upper airway obstruction associated with eating, known as the café coronary, [2]

According to the National Safety Council, choking remained the fourth leading cause of unintentional injury death in the United States as of 2004. In 2006, a total of 4,100 deaths (1.4 deaths per 100,000 population) from unintentional ingestion or inhalation of food or other objects resulting in airway obstruction was reported. [3] The incidence rate was 0.5 deaths per 100,000 population aged 0-4 years. It was lower for adolescents and young adults. The incidence rate then increased steadily with age beginning in the sixth decade (2.6 deaths per 100,000 population aged 65-75 y) and rose rapidly after age 70 years (13.6 deaths per 100,000 population older than 75 y).

Morbidity increases if extraction of the object is delayed beyond 24 hours.

In the café coronary syndrome, a large object (often poorly chewed meat) lodges in the larynx or trachea, causing nearly complete airway obstruction. Respiratory distress, aphonia, cyanosis, loss of consciousness, and death occur in quick succession unless the object is dislodged. When the degree of obstruction is less severe or when the aspirated object descends beyond the carina, the presentation is less dramatic. Sudden onset of the classic triad (i.e., coughing, wheezing, decreased breathing sounds) is frequently not observed.

Presenting symptoms (other than cough) include fever, hemoptysis, dyspnea, and chest pain. A history of a choking episode is not always obtained or may have initially been ignored or misdiagnosed. Most patients or parents can identify a specific episode of choking; however, presentation is often delayed by more than a week. The latency period prior to the onset of symptoms may last months or years if the foreign body is inert bone or inorganic material. Patients with chronic symptoms may have been erroneously diagnosed as having asthma or chronic bronchitis. Young children and patients with neurologic or psychiatric disorders are at increased risk for aspiration but might not be able to describe symptoms or to report choking episodes.

Children are at risk for putting small toys, candies, or nuts into their mouths. Children aged 1-3 years chew incompletely with incisors before their molars erupt, and objects or fragments may be propelled posteriorly, triggering a reflex inhalation.

Among adults, the following conditions, actions, and procedures facilitate foreign body **aspiration :**

1.Impaired swallow reflex .

2.impaired cough reflex .

3. mental retardation .

4. alcohol or sedative use .

5. General anesthesia .

6 . Poor dentition .

7. Dental ,pharyngeal ,or airway procedures .

8. Altered sensorium .

9. Loss of consciousness.

10. Convulsions.

11.Maxillofacial trauma .

Frequently aspirated objects include food (especially nuts and seeds), teeth, dental appliances, and medical instruments. The original event might have been forgotten. Choking with severe dyspnea, leading to respiratory or cardiac arrest while eating, might be initially misdiagnosed as myocardial ischemia.

Imaging Studies perform standard posteroanterior inspiratory chest radiography to look for unilateral hyperinflation, lobar or segmental atelectasis, mediastinal shift, pneumomediastinum or radiopaque foreign body with or without privuse signs & the sensitivity for detecting signs of foreign body aspiration improves over time.

On chest radiographs, children have air trapping more often, while adults have atelectasis more often. If foreign body aspiration is suspected , a normal finding on chest radiographs does not exclude the diagnosis.

Expiratory chest radiographs are more sensitive for air trapping than inspiratory chest radiographs . Signs are enhanced lucency & relatively low diaphragm position . if the patient cannot cooperate ,lateral decubitus views may demonstrate air trapping in the dependent lung. [(3)]

CT scanning of the chest may show the object or may identify localized air trapping .
Fluoroscopy of the chest can be performed to observe diaphragmatic & mediastinal shifiting of air trapping while the patient is breathing if the diagnosis is in doubt or if the patient cannot cooperate .
Radioisotope lung perfusion scanning may demonstrate perfusion defects due to hypoxic vasoconstriction in poorly ventilated regions, even when physical examination and radiography findings are minimal.
Acute choking, with respiratory failure associated with tracheal or laryngeal foreign body obstruction, may be successfully treated at the scene with the Heimlich maneuver (back blows, and abdominal thrusts).
The severity of the complications of foreign body aspiration depends on the size, shape, composition, location, and orientation of the aspirated object. The following complications may ensue: cough ,dyspnea ,stridor ,hemoptysis, asphyxia, laryngeal edema, pneumothorax,pneumomediastinum,tracheobronchial rupture or cardiac arrest. Delay in treatment can result in the following conditions: obstructive emphysema,atelectasis ,tracheoesophageal fistula, bronchial stricture, pneumonia, persistent cough , hemoptysis , polyp formation ,localized bronchiectasis ,chronic postobstructive pneumonia,lung abscess , bronchopleural fistula or decreased lung perfusion .
Chronic complications may be due to the foreign body itself or to trauma induced during attempts to remove the object. The complication rate increases if extraction is delayed. Noncardiogenic pulmonary edema may develop with reexpansion of an atelectatic lung. Bleeding from granulation tissue is usually mild but can be massive. Relief of long-standing bronchial obstruction can result in soiling of the bronchial tree with purulent secretions, unusual complications may ensue like, pulmonary hemorrhage, laryngeal stenosis,trachoesophageal fistula, perforation, mediastinitis, impaction of parts of instruments or distal impaction of foreign body fragments.

Materials & methods:

This is a descriptive study was done Over a period of 2 years in Al_Anbar government in the period of From January 2008 to December 2009, 100 case were referred to the department of thoracic & cardiovascular surgery of Al-Ramadi teaching hospital & Al-Fallujah General hospital in Al-Anbar government because of suspected aspiration of tracheobronchial foreign bodies.The data collected were included age, gender, history of foreign bodies inhalation from the patients or from their relatives. In 75 instances, a definite history of foreign body inhalation was obtained & confirmed at bronchoscopic examination. The remaining 25 patients, about whom such information was unobtainable, where treated for some time as if they had a chest infection.at bronchoscopic study ,however ,a foreign body was found in 15 cases.
The youngest patient was 5 months old , & the accident was most prevalent in children between the ages of 1 -5 Years . Total of 73 patients were seen within the first 24 hours of the incident.
Patients with a definite history of foreign body aspiration had an initial episode of choking ,gagging ,& coughing while eating or holding an object in the mouth, followed later by stridor or wheezing respiration . children with a FB in the larynx & trachea had strider ,whereas those with a FB in the bronchi had dyspnea or a wheeze heard at the open mouth .
Cough & fever with repeated chest infections were encountered with long-standing FB ,in patients with vegetable FB & in suspected cases .

Chest X-ray showed no abnormalities in 32 patients (table 5) ,whereas a radiopaque FB was seen in 27 patient (fig . 1,2 & 3) .other patterns of radiologic findings included pneumonitis ,obstructive emphysema ,obstructive atelectasis & bronchiectasis .

A Rigid bronchoscope & general anesthesia were used in 87 patients ,while flexible bronchoscope & local anesthesia with sedation in 15 patients (2 case management by flexible then change to rigid bronchoscopy) .

With limit use as well as new availability of flexible bronchoscope in Al-Fallujah General Hospital to removal of FB in 15 case. Endoscopic removal (rigid or flexible) was successfully achieved in nearly all patients (90 case) , with thoracotomy being needed in only one (bilobectomy of Rt. middle & lower lobe).was necessary because of severe bronchiectatic changes. All patients were nursed after procedure with an oxygen ,controlled temperature ,intravenous fluid to combat dehydration & acidosis ,antibiotics were given to patients with long standing foreign bodies as well as prophylactic, nearly all the patients were discharged from the hospital within 24-48 hours after the procedure ,except one case after 7 days after thoracotomy .

The commonest object was a metallic seen in 29 case (29 %) from all patients with suspected foreign bodies . Other are listed in table 2 &4.

In 23 patients ,various degrees of laryngeal edema were noticed at the end of the procedure when a dose of hydrocortisone was given & treated conservative . No need for tracheostomy .

Cardiac arrest caused by hypoxia occurred in 2 patients during bronchoscope treatment were successfully resuscitated .

Results:

The age, gender ,frequency & distribution cases according to the age , site , type of foreign bodies according the site , radiological finding & complication will be shown in table 1,2,3,4,5 & 6 respectively .

Table 1: Distribution of patient (referral) according to age & sex.

Age \ year	Male	Female	Total
< 1	1 (2%)	4 (7.8%)	5 (5%)
1-5	35 (71.4%)	35 (68.6%)	70 (70%0
6-10	7 (14.2%)	3 (5.8%)	10 (10%)
11-15	3 (6.1 %)	4 (7.8%)	7 (7 %)
16-20	1 (2%)	3 (5.8%)	4 (4%)
21-25	1 (2%)	2 (3.9%)	3 (3%)
> 25	1 (2%)	zero	1 (1%)
	49 (100%)	51 (100%0	100(100%)

Table 2: Frequency & distribution of cases with suspected foreign body according to the age.

Age /y	A Watermelon seeds & other seeds	B Nuts (peanuts ,pistachio .	C Vegetables ,e.g. beans	D Metallic e.g. nail ,screw, pin	E Beads	F Food particles e.g. egg shell, bone	G others e.g. plastic pieces, nylon	N no foreign body	Total
<1	3(10.7 %)	Zero	zero	2(6.8%)	zero	zero	zero	zero	5(5%)
1-5	24(85.7 %)	7(87.5 %)	3(100 %)	15(51.7%)	4(80 %)	4(66.6 %)	7(63.6 %)	6(60%)	70(70 %)
6-10	1(3.57 %)	1(12.5 %)	Zero	5(17.2 %)	zero	1(16.6 %)	1(10%)	1(10%)	10(10 %)
11-15	zero	Zero	Zero	1(3.4%)	1(20 %)	1(16.6 %)	2(20%)	2(20%)	7(7%)
16-20	zero	Zero	Zero	3(10.3 %)	Zero	zero	zero	zero	4(4%)
21-25	zero	Zero	Zero	2(6.8%)	Zero	zero	1(10%)	1(10%)	3(3%)
>25	Zero	Zero	Zero	1(3.4%)	Zero	Zero	zero	zero	1(1%)
Total	28(100 %)	8(100 %)	3(100 %)	29(100 %)	5(100 %)	6(100 %)	11(100%)	10(100%)	100(100%)

Mean age = 6 years +- 3 SD

Table 3: Frequency & distribution of site of suspected foreign body according to the age :

Age\ year	Right MB	Left MB	Right lower bronchus	Trachea	No site	Total
< 1	3 (4.4%)	Zero	zero	2(22.2%)	zero	5(5%)
1-5	48(71.6%)	11(91.6%)	1(50%)	4(44.4%)	6(60%)	70(70%)
6-10	8(11.9%)	zero	1(50%)	zero	1(10%)	10(10%)
11-15	4(5.9%)	1(8.3%)	zero	Zero	2(20%)	7(7%)
16-20	3(4.4%)	zero	zero	1(11.1%)	zero	4(4%)
21-25	1(1.4%)	zero	zero	1(11.1%)	1(10%)	3(3%)
>25	zero	zero	zero	1(11.!%)	zero	1(1%)
Total	67(100%)	12(100%)	2(100%)	9(100%)	10(100%)	100(100%)

Table 4:frequency & distribution of cases suspected type of FB according to the site.

Type FB	Right MB	Left MB	Right lower bronchus	Trachea	No FB	Total
Watermelon seeds & other seeds	24(35.8%)	2(16.6%)	2(100%)	Nil	Nil	28(28%)
Nuts	7(10.4%)	1(8.3%)	Nil	Nil	Nil	8(8%)
Vegetables	2(2.9%)	1(8.3%)	Nil	Nil	Nil	3(3%)
Metallic	14(20.8%)	6(50%)	Nil	9(100%)	Nil	29(29%)
Beads	5(7.4%)	Nil	Nil	Nil	Nil	5(5%)
Food particles	5(7.4%)	1(8.3%)	Nil	Nil	Nil	6(6%)
others e.g. plastic pieces, nylon	10(19.9%)	1(8.3%)	Nil	Nil	Nil	11(11%)
no foreign body	Nil	Nil	Nil	Nil	10(10%)	10(10%)
Total	67(100%)	12(100%)	2(100%)	9(100%)	10(10%)	100

Table5: frequency & distribution of cases suspected FB according to the radiological finding .

Type FB	normal	Radiopaque FB	Pneumonia	Emphysema	Atelectasis	Bronchiectasis	total
Watermelon seeds & other seeds	1(34.3%)	nil	5(31.2%)	8(47%)	4(57%)	Nil	28(28%)
Nuts	1(3.1%)	Nil	5(31.2%)	2(11.7%)	Nil	Nil	8(8%)
Vegetables	1(3.1%)	Nil	1(6.2%)	1(5.8%)	Nil	Nil	3(3%)
Metallic	1(3.1%)	27(100%)	1(6.2%)	Nil	Nil	Nil	29(29%)
Beads	2(6.2%)	Nil	1(6.2%)	2(11.7%)	nil	Nil	5(5%)
Food particles	4(12.5%)	nil	Nil	Nil	1(14.2%)	1(100%)	6(6%)
others e.g. plastic pieces, nylon	6(18.7%)	Nil	1(6.2%)	3(17.6%)	1(14.2%)	Nil	11(11%)
no foreign body	6(18.7%)	Nil	2(12.5%)	1(5.8%)	1(14.2%)	nil	10(10%)
Total	32(100%)	27(100%)	16(100%)	17(100%)	7(100%)	1(100%)	100(100%)

Table 6: frequency & distribution of cases suspected FB according to the complication.

Type FB	Laryngeal edema	pneumomediastinum	Pneumothorax	Surgical emphysemia	Cardiac arrest	Bronchectasis	Nil	Total
Water melon seeds & other seeds	6(26%)	1(33.3%)	1(50%)	2(40%)	1(50%)	Nil	17(26.5%)	28(28%)
Nuts	4(17.3%)	1(33.3%)	nil	Nil	Nil	Nil	3(4.6%)	8(8%)
Vegetables	1(4.3%)	Nil	Nil	Nil	Nil	Nil	2(3.1%)	3(3%)
Metallic	3(13%)	1(33.3%)	1(50%)	2(40%)	Nil	Nil	22(34.3%)	29(29%)
Beads	1(4.3%)	Nil	Nil	Nil	Nil	Nil	4(6.25%)	5(5%)
Food particles	3(13%)	Nil	Nil	1(20%)	Nil	1(100%)	1(1.5%)	6(6%)
others e.g. plastic pieces, nylon	3(13%)	Nil	Nil	Nil	1(50%)	Nil	7(10.9%)	11(11%)
no foreign body	2(8.6%)	Nil	Nil	Nil	Nil	Nil	8(12.5%)	10(10%)
Total	23(100%)	3(100%)	2(100%)	5(100%)	2(100%)	1(100%)	64(100%)	100

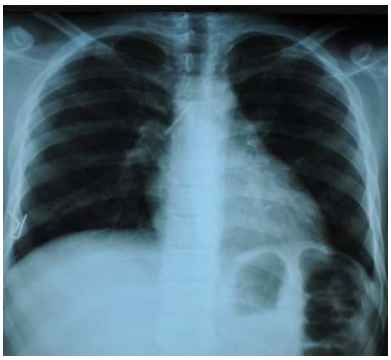

Fig. (1) X-ray film of the chest with a metallic foreign body in the right main bronchus.

Fig. (2) X- ray film of the chest FB in Trachea

Fig.(3) foreign body

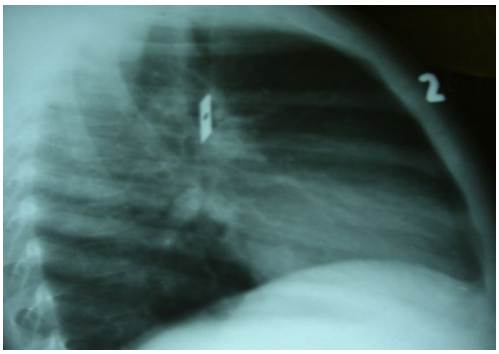

Fig. (4) metallic FB. in lateral Chest X-ray.

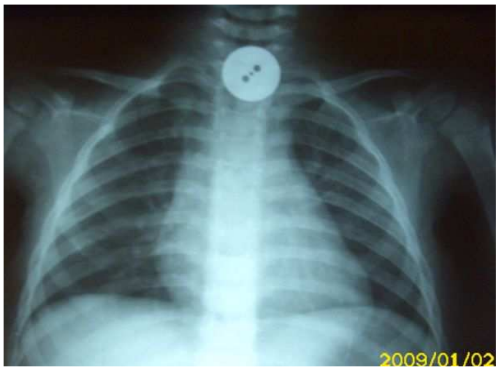

Fig.(5) FB in trachea

Fig.(6) FB open pin in trachea.

Discussion:

In the middle East ,the prevalence of foreign body aspiration is high ,(9). & the puzzles involved in diagnosis & the problems in their management are many .

The high prevalence is due to parental attention & dietary habits.

Analysis of our 100 cases showed that ,negligence, carelessness,& ignorance were responsible for most foreign body accidents .

In table 1 frequeincy & distribution of patients with suspected FB nearly no different between male & female .

The youngest patient was 5 months old ,& the accident was most prevalent in children between the age 1-5 year in 70 cases as 35 (100%) male &35 (50%) female respectively , Children, are at risk for foreign body aspiration because of their tendency to put everything in their mouths and because of the way they chew. Young children chew their food incompletely with incisors before their molars erupt.

Objects or fragments may be propelled posteriorly, triggering a reflex inhalation.

The prevalent of FB in Children in our series nearly the same in result tracheobronchial FB in the Middle East for Elhassani (10) ,between the age 1-2 years .

The common types of FB aspiration are two types nearly equal metallic FB 29(29%), watermelon seeds & other seeds in 28 (28%) respectively other are listed in table 2 &3.

Most probably, the incident of metallic FB due to carelessness & negligence & habits of this area as availability & the tendency to put everything in their mouths & work habits in adult patient as put metallic FB e.g. pin ,screw ..esc in mouth during work & sudden take breath lead to inhalation the FB.

The ways for accidental inhalation of watermelon seeds & other seeds by children are occur in two ways ,in our country as in other all Middle Eastern countries ,where the temperature in summer reach more than 45 C ,iced drinks & cold fruits are commonplace, watermelon ,being cheap & available throughout the season ,is the fruit of choice .Slices of watermelon are given to child without the seeds being removed . Also ,watermelon seeds are usually consumption after washed ,& dried to be salted & roasted with other nuts as such or after removal of the shell.

Beads are used for prayer & meditation (prayer beads) or distraction (worry beads),such beads are another object aspiration in our country & Islamic countries.

Diagnosis of FB based on history ,clinical examination & radiologic findings . the reasons for delay diagnosis include neglecting the importance of detailing historical facts ,confusing the diagnosis with other conditions & relying on a normal radiographic appearance. (9)

It is necessary to question every person who has been contact with the child & adult patient with suspected FB inhalation to elicit the history of choking or gagging & coughing that may have escaped notice . when these symptoms are elicited , the case should be regarded as one o FB aspiration & bronchoscopic treatment is mandatory .In this series, 25 patients lacked any history of inhaling a FB & were treated as chronic chest infection .when a bronchoscopic examination was made 15 cases (60%) were found to have a FB.

The presence of a FB should be suspected when the response to proper medical treatment in cases of chest infection is not as expected , (9) & a bronchoscopic study should be performed rather than running the risk of sudden asphyxia or other serious pulmonary complications.

There are usually initial symptoms of choking ,gagging ,& coughing while the child is eating or holding an object in the mouth . later manifestation depend on the nature of the FB ,its size & site ,its effect on the lung distal to it ,& the stage at which the patient is seen. (10) Nonvegetable FB afforded few symptoms & signs for weeks or months until they become obstructive ,causing emphysema or atelectasis & dyspnea . Vegetable FB , on other hand, whether obstructive or not, tend to cause immediate & violent local & general reactions with fever & toxemia . watermelon seeds do not produce a significant reaction in the first few days ,but if retained for 2 weeks or more ,they become swollen & obstructive ,which results in emphysema & later atelectasis.

Laryngeal & tracheal FB cause stridor & indrawing of the anterior chest wall ,the signs & symptoms of a FB in a main bronchus are chiefly those of partial or complete bronchial obstruction.

The frequency & distribution of FB in this series more found in the right endobronchial tree 69 (69%) than in the left side 12 (12%) , & 9 (9%) in the trachea with no FB in 10 (10%) cases with suspected FB, & this because the angles made by the mainstem bronchi with the trachea are identical in early years of life (until age 15 years) , (1) foreign bodies are found on either side with equal frequency in persons in this age group. With normal growth and development, the adult right and left mainstem bronchi diverge from the trachea with very different angles, with the right mainstem bronchus being more acute and therefore making a relatively straight path from larynx to bronchus. Objects that descend beyond the trachea are more often found in the right endobronchial tree than in the left.

An X-ray film of the chest should be obtained before bronchoscopy (11) radiopaque foreign bodies provide no problem in diagnosis, but radiolucent ones can be suspected only from the secondary effects produced on the lung. Nearly one thirds (32 case) of the Chest X-ray in this series revealed no abnormality , 27 case with radiopaque finding , other 17% with emphysema ,16 % with pneumonia , 7% with Atelectasis ,& 1% with bronchiectasis change in Chest X-ray table 5 .

Watermelon seeds are not radiopaque in a plain film ,but they may cast a shadow in an overpenetrated film ,most beads are not radiopaque .

Almost all aspirated foreign bodies can be extracted bronchoscopically. If flexible or rigid bronchoscopy is unsuccessful, surgical bronchotomy or segmental resection may be necessary. Chronic bronchial obstruction with bronchiectasis and destruction of lung parenchyma may require segmental or lobar resection , In this series general anesthesia is used during rigid bronchoscopic treatment in 87 cases & local anesthesia with

sedation in 15 cases (2 case treated by flexible the rigid bronchoscopy due to failure removal of FB).

Rigid bronchoscopy usually requires heavy intravenous sedation or general anesthesia. The rigid bronchoscope has important advantages over the flexible bronchoscope. The larger diameter of the rigid bronchoscope facilitates the passage of various grasping devices, including a flexible bronchoscope. A better chance of quick, successful extraction and better capabilities of suctioning clotted blood and thick secretions are offered by the rigid bronchoscope & Unlike the flexible bronchoscope, the patient can be ventilated through the rigid scope; therefore, ventilation of the patient can be maintained. Rigid bronchoscopy is the procedure of choice for removing foreign bodies in children and in most adults.

Flexible fiberoptic bronchoscopy can be directly inserted into the trachea transnasally or transorally. It can also be inserted into the trachea through a rigid bronchoscope or through a large endotracheal tube. Sedatives can be administered if needed. Small flexible forceps, baskets, and Fogarty balloon catheters can be inserted through the narrow working channel with video camera can visualize, grasp, and remove certain foreign bodies of appropriate size, shape, and position.

Despite its limitations ,use of the flexible fiberoptic bronchoscope may be necessary in patients with maxillofacial or cervical trauma in whom rigid bronchoscopy is not feasible.

Flexible bronchoscopy can be performed to confirm, localize, and visualize the foreign body in the tracheobronchial tree. Diagnostic flexible bronchoscopy prior to rigid bronchoscopy has even been advocated for nonasphyxiating children in whom the diagnosis of foreign body aspiration cannot be confirmed.

Limit use of the flexible bronchoscope for extracting foreign bodies to adult patients who aspirated objects too small to cause total airway obstruction but that can be grasped securely without shattering.

Whichever technique is used, it is essential to determine that all of the foreign body has been extracted. Objects not successfully removed may fragment and become impacted in bronchi that are more distal. Carefully examine the extracted object for integrity. Inspect the tracheobronchial tree for fragments or other unsuspected foreign bodies.

To avoid increasing morbidity, this conservative measure should not delay bronchoscopic extraction by more than 24 hours.

In our series ,78 FB removal by rigid ,12 FB by flexible (recently available) , 7 case no FB by rigid & 3 case no FB by flexible.

Oxygen administered intermittently through Venturi system with rigid scope .Quick & gentle introduction of instruments is essential & the bronchoscopic examination should be performed under the best possible condition ,for extraction at the first attempt is likely to be easier than at the second (The first chance is the best chance) . prolonged , persistent ,& frequent attempts at short periods are contraindicated , especially in infants ,as they may provoke severe laryngeal edema with subsequent respiratory distress that endangers the patient ,s life . (12)

All vital signs & pulse oximetry should be carefully observed during bronchoscopic treatment , nursed the patient ,& chest X-ray film should be obtained .

Watermelon seeds are easy to remove with a bronchoscope as well as the metallic FB ,while the beads are sometime difficult to extract ,because of their round or oval & smooth surface . they usually lodge in the longitudinal axis with the hole permitting air flow without obstruction ,& can grasps the FB by one jaw of the forceps if the hole is large or with used a number 3 or 4 Fogarty catheter is passed through the hole & then inflated ,& the bead & bronchoscope are removed together. (12,13)

in our series only one case complicated & require for thoracotomy & bilobectomy (right middle & lower lobe) resection & this one option require if endoscopic procedure not accessible to remove the foreign body .
after bronchoscopic treatment , sometime irritative cough & mild laryngospasm are likely & the patient be watched for the development of laryngeal edema , & most cases in our series treated conservative & no one need for tracheostomy .

Conclusion & Recommendation :

1 .In Al-Anbar as other part of Iraq ,the prevalence of tracheobronchial aspiration of foreign bodies in children is high than adults.
2 .The type of foreign body common to this area & incidence in relation to the habits of people have been studied.
3 .a bronchoscopic study should be performed rather than running the risk of sudden asphyxia or other serious pulmonary complications.
4.Almost all foreign bodies can be removed from the tracheobronchial tree using bronchoscopy. The complication rate increases as the time to the diagnosis and extraction of the object exceeds 24 hours.
5. Bronchoscopy (rigid & flexible) can be both diagnostic & therapeutic .
6. Chest physicians are allowed to practice flexible bronchoscopy & for diagnostic only.
7. Thoracic surgeons are familiar with both techniques , the rigid & the flexible types in diagnosis & therapy .
8. Bronchoscopy is a simple & safe procedure but when an accident occur ,serious complication may arise with devastating rapidity .
9. Theoretically ,the prevention of foreign bodies is simple ; in practice ,it is almost impossible .
10. Carelessness was responsible for most foreign bodies accidents.
11. Holding an infant's head downwards in the hope that it will come out should never be attempted ; for ,if the foreign body is free in trachea or one of the bronchi ,it is then apt to be displaced & become impacted in subglottic region resulting in asphyxia & sudden death .

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