بسم الله الرحمن الرحيم

شبكة المعلومـــــات الجامعية

التوثيق الالكتروني والميكروفيلم

شبكة المعلومات الجامعية

جامعة عين شمس

التوثيق الالكتروني والميكروفيلم

﴿ قـــسـم ﴾

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STUDY OF THE UTILITY OF TRANSBRONCHIAL NEEDLE ASPIRATION IN THE DIAGNOSIS OF MEDIASTINAL MASSES AND ENDOBRONCHIAL LESIONS

THESIS

Submitted to the Faculty of Medicine
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DEDICATION

To my father,

Prof. Dr. Magdy Abou-Rayan

For your unlimited support,....

Continuous guidance...

For all the morals that you represent

I love you

Thank you

To my mother,

Dr Ramza El-Bannan

For everything you have done...

For every single step I took & will take

For your endless help & overwhelming love

I owe you my life

Thank you

To my brother, Islam

For your ever lasting patience and kindness

For being always there for me

You are the best

Thank you

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In an article written by Dr. Kolloprath, assistant of Gustav Killian in the introduction to the report of the 1st Bronchoscopic Extraction of FB).

Dr. Kolloprath said that On March 30th 1897, he had the honor to assist his admired principal, Herrn. Prof. Killian in extraction of a piece of Bone from the right bronchus.(1) "This case is of such peculiarity with respect to its diagnostic and therapeutic importance that more extensive description seems justified".(1)

A statement that seems a bit old, yet a turning point in the history of pulmonology.(1) In order to understand this statement one must consider the state of art of airway inspection at that time. It is known that examination of the internal body organs has been a scientific interest for centuries, the ruins of Pompeii have produced speculi that were likely used by some of the earliest healers.(2)

The respiratory system has a communication with the external environment, that provides an attractive opportunity for the examination of the lungs which is denied to other closed systems in the body such as the cardiovascular system.(3)

Access to the airways in the living patient was tried already by Hippocratus (460-370 BC). Who advised the introduction of a pipe into the larynx in a suffocating patient.(4)

Avicenna of Buchara about (1000 AD) used a silver pipe for the same purpose.(4)

In 1542 vesalius observed that the heart beat and pulsations of the great vessels stopped when he opened the chest of an experimental animal but returned again after the introduced a reed into the airways and inflated the lung which made him mistakenly assume that the trachea was part of the circulatory system, from which it carried the name "rough" in Greek or the Arteria Aspera "the rough artery" in Latin.[4]

Experiments for the inspection of the airways was going on, history does tell us that in 1743 Monsieur Leuret developed a speculum through which he could remove polyps from the nose and throat, however, it wasn't a physician but a singing teacher in London, Manuel Garciaa who in 1854 1st observed his own larynx by the help of a Dental Mirror that he brought from a French instrument maker in Paris.[2,5]

Nevertheless, the endoscopic exam of the larynx was 1st thought feasible in 1828 when Hoarce Green noted that larynx can tolerate the presence of foreign body (FB). An elastic catheter was inserted through the larynx and passed to the lower bronchi, silver nitrate solution was introduced with a syringe.[2]

Green presented this technique and the results of his work to the surgical society of New York in 1847. Green was Blammed by the committee as presenting a "mostrous assumption, ludicrously absurd, and physically impossible, ... an anatomical impossibility and unwarrable innovation in practical Medicine" and he was asked to resign from the membership of the society.....[2]

But Joseph O'Dwyer persisted, and introduced the method for emergency intubation of diphtheric children in 1885. D'Owyer also is given the credit for noting the sever complication's of FB which at that

time usually could have lead to either death or chronic illness of the patient due to purulent infection, abscess, fistula or malnutrition.[2,6]

In 1895 Kristin examined the interior of a patient larynx directly using D'wyer's tube ("autoscopy" he called it), Kristin said that he convinced himself that one can pass and the vocal cords intentionally but as "the region of the lower trachea is very dangerous" according to his believes, he warned against such a procedure!!!.[4]

In a nearby area in Europe, a young scientist at the pharmacological institute of Vienna, Sigmoid Freud, driven by his eagerness to make a fortune to be able marry his Fiancée was trying to make a break through invention in medicine by withdrawing morphinists from their addiction using cocaine. The experiments resulted in a disaster but the effect of cocaine in pair relief on local levels was beyond doubt, to his friend and colleague killer, an eye specialist, who titled cocaine as a "Mirrical Drug" and thus local anesthesia was born.[4]

On the other side of the Atlantic TA Edison by that time, reached the invention of the electric bulb.[7]

Hence at that time of the end of the 19th century, those 3 crucial inventions:

1- The detection of local anesthesia.
2- The invention of electricity as a light source.
3- The development of instruments for inspection of the upper respiratory tract inspired Gustav Killian of the University of Freiburg to combine those 3 technique and to apply the new method on Man for the 1st time in 1897 where he noticed the flexibility of the trachea how easy he could adjust the angle of the main bronchi and introduce the endoscopy down

to the lobar level.[7] Killian said "I think I have made an important discovery" in fact, it was the birth of bronchoscopy not just an important discovery and Killian was titled for ever as the "father of bronchoscopy" and by the year 1900 Freibung became the Mekka of bronchoscopy with Killian teaching all those who came from different parts of the world what he called "direct bronchoscopy", and what we know now as "rigid bronchoscopy".[4]

In 1870 Jhon Tyndall described the optical properties of glass fibres created when a glass rod was heated and rapidly pulled apart.[2]

It was not until the 1930 when H lamb a German scientist, advocated the application of glass fibres to flexible gastroscope, but it took about 35 years until this technique was available for bronchoscopy on the hands of Dr. Shigeto Ikeda who established the standards for firbooptic bronchoscopy (FOB). Ikeda was stimulated by his interest in the early diagnosis of lung cancer designed an instrument that could enter the sub segmental bronchi and directly visualize lesions and obtain specimens for tissues and cytological diagnosis.[2]

Dr. Ikeda presented his instrument and early experience in April 1970. Its introduction let to the 2nd era in the exploration and documentation of the anatomy of the tracheo-bronchial tree. The FOB has became the standard tool for this inspection. Tracheo-bronchial tree endoscopic examination progressed from the rigid technique Originally described by Killian to the flexible fibrotic applied by Dr. Ikeda (figure 1).[8]