Bronchial asthma, a multidimensional and often contradictory medical problem even to the present day, should have from very early attacked the attention of man, both as sufferer and as medicine-man, who would have very much been impressed by its dramatic attacks. Though, we lack any certain knowledge about the ancientness of the disease.

Both the structure of the respiratory system as well as the nature of bronchial asthma itself do not allow the existence of palaeopathological material so that any attempt to establish an early history of this disease should be based on circumstantial only evidence. Even in the Egyptian mummies, the lungs of which were removed and preserved by a special technique, so that there exists a "positive evidence of gross inflammatory changes in the lung and the pleura" (1) there cannot be any traces of asthma because of its true nature. So from Pharaonic Egypt there is only circumstantial evidence from the Papyri. The 53rd column of the Papyri Ebers gives a series of remedies which Ebell (2) translates as "to eradicate asthma". However there is some doubt as to the translation here (1).

The term "asthma" is a Greek word, "ανεξετευμένος", which derives from the verb "ανεξεταμενέω" meaning to exhale with open mouth.

The word "ανεξεταμενέω" appears for the first time in the Iliad (0, 241, 0 10) with the meaning of a short-drawn breath, a hard breath or panting and similar is the meaning of the corresponding verb "ανεξεταμενέω" (K 379, E 585, K 96). Homer speaks about a warrior who died in the end of a furious battle with "asthma" and perspiration: "ανεξεταμενέων ἀναφυλακὴς τιθὲται ανεξεταμενέων ἡμείς ἔπεμψαμεν" (II O 241). With a very alike conceptual content the word "ανεξεταμενέω" is also used by Pindar (N. 10, 139, N.3, 84), Aeschylus (Pers. 484) and Plato (Pep. 568 D, 556 D).

A. HIPPOCRATES

The earliest text where the word "ανεξεταμενέω" is found s as medical term in the Corpus Hippocraticum. Examining the Hippocratic ideas about asthma it should be brought in mind as Neuburger (3) has pointed out, that the various types of disease recognised in Hippocratic pathology do not always correspond to the nosological entities differentiated by modern aetiological and anatomical methods. This is due to the fact that the ancients based their classification on the most salient symptoms, whereby many heterogenous diseases were grouped together into the same class.

In the Hippocratic writings are to be found quite a few references to asthma,
but none of them gives a clear-cut clinical description, similar to those concerning
so many other diseases. Descriptions which make Hippocratic nosography to appear
vivid and modern even today (4). Although several diseases of the respiratory system,
especially of the lungs, are exhaustively described by the Hippocratic writers (3),
one of them has dedicated a special chapter to asthma. Talking about burdening
or disturbance of the respiration, the Hippocratics use rather indiscriminately
the terms dyspnoea, tachypnoea, orthopnoea and asthma. And the question then
arises whether by the term asthma they meant a separate clinical entity, as
pleurisy and peripneumonia or they meant plainly a symptom (5). A question very
difficult to be answered.

The Hippocratics thought adults to be more liable to asthma (Littre IV
498,500) (6), a local disease of districts exposed to warm winds (Littre II 18) and
threatening man mostly at autumn and summer-time (Littre IV 496) (6). They
recognized the paroxysmical manner of the asthmatic attacks, noticed the foamy
expectoration (Littre V 306) (6) and suggested as a prognostic sign the formation
of a humpback before puberty (Littre IV 574) (6).

An aetiological interpretation of asthma is attempted in the Hippocratic
treatise « on the Nature of Bones » — interpretation which is quite in accordance
with the prevailing Hippocratic concepts in Anatomy and Physiology : « The artery
(trachea) which has little blood but a lot of "pneuma" ([— spirit]) gives within
the spaciousness and looseness of the lung many conduits which become chondroid
on leaving the lung. Sometimes a foreign body enters into these pathways either
with drinks or with the passing through « pneuma » or blood, because these veins
are such and the lung is spongy and it can concentrate a lot of liquid produced
above, for the lung is the natural place of the coming in liquids. On the other
hand, it is not sufficiently pressed into the veins, so that not being advanced rapidly
enough, the lung cannot remove the foreign bodies. These bodies remain there
forming a petrifaction (callus) which occupies the pathways impeding both inhala-
tion and exhalation and producing tachypnoea. This situation results to diseases
like asthma and dry phisis. Though in case that in this situation the liquid
gathered there is so much increased that it cannot be solidified (to produce a
callus), it rots the lung and the parts around with result the formation of empyemas
of the lungs as well as phisis. But these maladies have other causes as well. »

B. ARETAEUS

The best by any account clinical description of asthma in antiquity is given by
Areataeus, a Greek physician born in Cappadocia, a Roman province in Asia Minor,
several centuries after Hippocratic times. He probably lived in the second half of
the first century A.D. (3), but his work remained in obscurity until 1552 when a
Latin translation appeared in Venice, while the original Greek text was published
two years later in Paris (8).

A master clinician Areataeus made keen and objective observations and wrote
accurate and simple descriptions of several diseases including diabetes mellitus,
epilepsy, pneumonia, pleurisy, tetanus and asthma. His knowledge of the respiratory
disturbances in particular is remarkable.

Areataeus the Cappadocian shared the Hippocratic spirit and methodology, but
in contrast to the Hippocrates he deals with asthma as an autonomous clinical
entity and not as a symptom. But, on the other hand, the clinical entity Areataeus
names as asthma has a wider sense and it cannot be identified with the conceptual
content of the term asthma in modern medicine. It seems that Areataeus does not
differentiate bronchial asthma from other diseases producing a paroxysmical
dyspnoea, but he puts all of them together under the same label.
The Cappadocian distinguishes acute from chronic diseases. Asthma is a chronic disease to which he has dedicated a whole chapter, that starts with the definition of a broad condition called asthma. « If from running, gymnastic exercises, or any other work, the breathing becomes difficult, is called « asthma » (8). Within the framework of this condition he places a nosological entity called « orthopnoea » which corresponds quite a lot to the modern concept of asthma, although they are not identical: « And the disease Orthopnoea is also called Asthma for in the paroxysms the patients also pant for breath » (8). On the other hand, Aretaeus might had recognized cardiac asthma (5), for he says that « ... if the heart be affected the patient could not stand out long, for it is the origin of respiration and life » (8). He then accepts the Aristotelic teaching of the importance of heart for the maintainance of life.

Aretaeus considers the lungs as the seat of asthma, but he also acknowledges the « sympathetic » involvement of the diafragm and the thorax, « the parts which assist in respiration ».

The asthmatic attack is described fully, very accurately and so vividly that this account is worth of reading even today. As prodromic symptoms he gives, « heaviness of the chest, sluggishness to one’s accustomed work and to every other exertion, difficulty of breathing in running or on a steep road, they are hoarse and troubled with cough, flatulence and extraordinary evaluations in the hypochondriac region, restleness, heat at night small and imperceptible, nose sharp and ready for respiration » (8). He then gives the dramatic picture of the asthmatic attack: « the cheeks are ruddy, eyes protuberant, as if from strangulation, a rale during the waking state, but the evil much worse in sleep, voice liquid and without resonance, a desire of much and of cold air, they eagerly go into the open air, since no house suffices for their respiration, they breathe standing, as if desiring to draw in all the air which they possibly can inhale, and, in their want of air they also open the mouth as if thus to enjoy the more of it, pale in the countenance, except the cheeks, which are ruddy, sweat about the forehead and clavicles : cough incessant and laborious, expectoration small, thin, cold, resembling the efflorescence of foam, neck swells with the inflation of the breath (pneuma), the praecordia retracted, pulse small, dense, compressed, legs slender : and if these symptoms increase, they sometimes produce suffocation, after the form of epilepsy » (8).

When the crisis turn to end the cough lessens, the expectoration becomes more copious and richer, the urine increases and the voice becomes louder.

Aretaeus attempts a speculation regarding the cause of asthma, a speculation that is fully in accordance with his biomedical theory. He thought nature to be a sum-total of organic forces kept in equilibrium by the pace of the organism. Heart is the centre of pneuma or inherent warm by which the mind performs all the functions of the body. Disease results from derangement of the humours, the pneuma or the pace (3). So cause of asthma is « a coldness and humidity of the pneuma, but the material is a thick and viscid humour » (8).

It is noteworthy that Aretaeus considers women more subject to asthma than men, because they are « humid and cold ». But men suffering from asthma « die of it more speedily ». Children have a better recovery, « for nature in the increase is very powerful to heat ». Unfortunately, the chapter on the treatment of asthma of the Aretaeus work has not been preserved.

C. GALEN

The lucid clinical picture of asthma given by Aretaeus cannot be found in the work of Claudius Galen, the greatest physician after Hippocrates in the ancient
medicine, who dominated western medicine for many centuries. Although a keen clinician Galen obscures his clinical observations by his efforts to reconcile them with the so often misinterpreted results of his experimental work and with his biophilosophical system in general. Galen has made several references to asthma but without emphasizing its spasmodic features. Though this is a clinical retrogression, Galen increased the insight into the nature of the respiratory disturbances and particularly of asthma, for he advanced the anatomical and physiological knowledge of respiration, producing even experimental asthma or at least dyspnoea.

It has been supported that to Galen asthma and dyspnoea were the same and both terms used by him to describe every kind of difficult breathing indiscriminately. But this is not the case, for Galen distinguishes very clearly asthma from dyspnoea in quite a few occasions. He certainly thought of asthma as a kind of dyspnoea but much severer and more striking.

Galen defines dyspnoea as a disturbance both of the inhalation and the exhalation, due to a thickening of the "pneuma". In case the "pneuma" becomes much thicker it is produced "asthma" which is a suffering bringing a strong haste for breathing as well as dysponea, forcing some people to sit up or even to raise up. Galen gives then orthopnoea as an inseparable component of asthma, while his account of the strong haste for breathing shows that the spasmodic manner of asthma did not escape him. This is confirmed by the fact that in another point Galen speaks about the frequent and violent spasmodic respiration during the asthmatic attacks which he compares elsewhere with the epileptic seizures.

As other signs and symptoms of asthma Galen presents frequent breathing and great expansion of the chest, redness of the face and headache. Also, he points out that the asthmatic patients prefer to sleep in an upright position, for they are afraid of dying while asleep.

In Galen's excessive writing the term asthma covers three different conditions, described quite in agreement with the Hippocratic texts and to some extent with Aretaeus work. He speaks first of all about asthma in a large sense, as a kind of dyspnoea produced from gymnastic exercises or any other strong effort. This disturbance of breathing might appear also "without exercises when there is a lack of room in the cavities of the lung". This asthmatic condition accompanies inflammations of the respiratory track, like angina, peripneumonia and lung emphyema. Besides this symptomatic asthma, Galen names asthma as well as orthopnoea a chronic disease which is also due to "a lack of room in the cavities of the lung", but it runs without fever.

Galen tried systematically to confirm his theoretical or clinical conclusions by experiments in animals, becoming whereby the founder of experimental physiology. In his treatise "On Anatomical Operations" he gives a detailed account of his experimentation on respiration. He produced respiratory disturbance, that is an asthma-like breathing by cutting off the intercostal muscles or the intercostal nerves or by intersections of the cervical spinal cord.
REFERENCES

2. Ebell B. The papyrus Ebers. Levin and Munksgaard, Copenhagen, 1937.
ROCHE:
une recherche médicale consacrée par l'importance de ses découvertes

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