

EDUCATIONAL AIDS IN THE UPPSALA MUSEUM OF MEDICAL HISTORY.

FOCUS ON THE HEART: FROM THE STETHOSCOPE TO THE PACEMAKER

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The Uppsala Museum of Medical History is a growing arena and an important resource for research and education among students, health care professionals, and visitors of all ages from different parts of the society. The artifacts are displayed in order to illustrate different aspects of the history of health care, of medical professions, and medical technology.

With a focus on the heart, four objects can be chosen in order to demonstrate important steps within European cardiology during the last 150 years:

1. The stethoscope invented by René Laennec (1781-1826), France.
2. The bloodpressure manometer constructed by Scipione Riva-Rocci (1863-1937), Italy.
3. The ECG constructed by Willem Einthoven (1860-1927), Netherlands.
4. The internal pacemaker constructed and applied by Rune Elmqvist (1906-1996) and Åke Senning (1915-2000), Sweden.

The Uppsala stethoscope was a gift from Laennec himself to the Swedish doctor Magnus Retzius in 1820. Laennec had become a physician at the Salpêtrière Hospital in 1814, and in 1816 he happened to discover how much better he could hear the heart beats through a sheet of paper rolled into a very tight roll placed on the precordial region (1,308). The stethoscope became the chief tool of the new modern medicine of objective signs, although many

patients and practitioners were doubtful in the beginning (2,84). Laennec described the first stethoscope in 1819 (3), and the Uppsala museum's stethoscope is very much alike. This improvement of auscultation was an important step towards identifying pathological arrhythmia and murmurs due to valve defects in living patients.

The blood pressure had earlier been measured in animals in a bloody way, but with Riva-Rocci's sphygmomanometer, first in 1896, it became possible to measure blood pressure without opening a vessel. An arm cuff connected to a mercury manometer made the measurement easy and rapid. The Uppsala manometer is enclosed in a wooden box, which makes it suitable for transports between patients. In 1912, the Massachusetts General Hospital started measuring the blood pressure of all admissions (1). This routine was spread within all modern hospitals and care settings, although it should take another 40-50 years to develop pharmacological drugs for lowering high blood pressure.

The electrocardiogram, ECG, was constructed by Willem Einthoven in 1903, and in 1906 the first registration was performed in Uppsala. Einthoven was laureated a Noble Prize winner in 1924. The Uppsala museum apparatus is magnificent with many details including water pots where the patients should put their hands and feet. The clinical use of the ECG was thoroughly investigated by Doctor Thomas Lewis (1881-1945) at the University College Hospital in London. By animal experiments, he learned how to correlate the various electrical waves recorded by the ECG with the sequence of events during a contraction of the heart. By that, he could use the ECG as a diagnostic tool to identify disturbances of the rhythm, changes due to high blood pressure, arteriosclerosis and myocardial infarction (2).

The internal pacemaker was constructed during the 1950's by the medical doctor and inventor Rune Elmqvist. The first patient to get this device was a 43 year old man in 1958. Thanks to this internal pacemaker, he survived and lived until he was 86 years. At the Uppsala museum, there are a number of different pacemakers to be seen, from the first one to the latest. Since an aging population can be expected to get more arrhythmic problems, like bradycardia or atrioventricular block, the number of implanted pacemakers will be increasing.

These four examples of medical technical tools are all displayed in the Uppsala museum together with some written information about each of them. In order to make the museum and its objects more useful for educational

purposes, we have found it necessary to add stories about the persons who invented the technical tools, stories about the professionals who worked with them, and above all, stories about the patients whose lives were saved, and who survived with a better quality of life.

That is why we now are inviting technicians, health care professionals, and students to work together with the museum pedagogues and staff. The goal is to attract more visitors of all ages and professions, and to let the museum become an arena for spreading knowledge about the history of medicine also among the visiting citizens.

REFERENCES

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