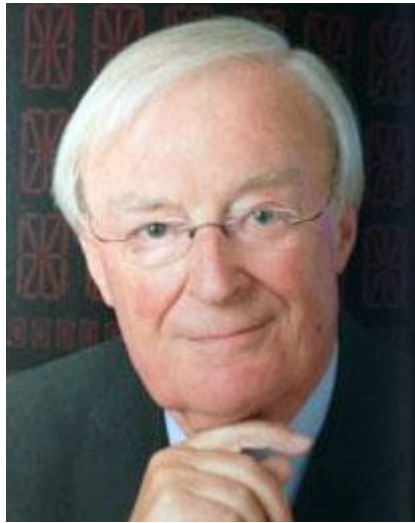


Hein J. J. Wellens: “A Giant of Maastricht”



Born 13 November 1935 The Hague, Netherlands – 9 June 2020 Maastricht

Emeritus Professor of Cardiology, University of Maastricht

Henrick Joan Joost (Hein) Wellens, M.D., was a Dutch cardiologist who is considered one of the founding fathers of the electrophysiology. Clinical cardiac electrophysiology enables patients with cardiac arrhythmias to be subjected to catheter electrode mapping and stimulation studies.

Paul Puech, first in Mexico and later in France; Benjamin Scherlag and Onkar Narula in the USA; and Dirk Durrer and Philippe Coumel in Europe were the field's pioneers in the 1950s and 1960s. The field's second wave of innovators used these techniques to unravel the mechanisms of tachycardia in humans and set the bases for their treatment. Among them, Hein Wellens in Europe and Kenneth Rosen, John Gallagher, and Mark Josephson in the USA had the greatest impact as researchers and teachers. Josephson is the author of the first and most successful textbook of clinical cardiac electrophysiology, now in its fourth edition.

As a pupil and collaborator of the late Professor Dirk Durrer in Amsterdam, Hein J.J. Wellens was involved in the early developments in programmed electrical stimulation

(PES) of the heart in Wolff-Parkinson-White syndrome (WPW). In these patients, it was shown for the very first time that arrhythmias could be initiated and terminated by critically timed premature beats. He described the mechanism of reentry tachycardia including WPW syndrome. He is a founder of modern era of tachycardia management concerning atrial and ventricular arrhythmias. He was a superb teacher and master electrocardiographer.

In 1971 he reported on the use of PES of the heart in patients with atrial flutter, AV nodal tachycardia and patients with accessory atrio-ventricular connections. His doctoral thesis (march 18, 1971) “Electrical stimulation of the heart in the study and treatment of tachycardias”.

In 1972 he showed that also in patients with ventricular tachycardia the arrhythmia could reproducibly be initiated and terminated by timed premature stimuli. These investigations were the basis for new surgical and pacing approaches to the treatment of cardiac arrhythmias. He also demonstrated that the reproducible initiation and termination of arrhythmias by PES of the heart allowed the study of the effect of antiarrhythmic drugs on the mechanism of the arrhythmia.

In 1977 he moved to the new University of Limburg in Maastricht to develop academic cardiology there. Starting from scratch he managed to create in Maastricht an internationally acknowledged center for the study and treatment of cardiac arrhythmias. He has published 685 manuscripts in peer reviewed journals and more than 200 chapters in books. Ten books on cardiology were written or edited. More than 150 cardiologists from abroad came to Maastricht for periods ranging from 6 months to 2 years for postgraduate training. At present, Dr Wellens directs a large academic cardiology department with a staff of 20 cardiologists and a well-known cardiology training program. Dr. Wellens is an internationally known teacher which has resulted in numerous

international invitations to give lectures. He is an honorary, corresponding or regular member of many international cardiological societies.

Over the past 25 years by developing a reproducible and objective method of studying arrhythmic mechanisms and effects of therapeutic interventions directly in the human heart, the work of Dr. Wellens has fundamentally changed the understanding and approach to cardiac arrhythmias.

Wellens, known among European cardiologists as "the giant of Maastricht", has for many years been associated with the University of Limburg School of Medicine in Maastricht, Netherlands. At his department of cardiology, many future clinical cardiac electrophysiologists trained from 1976 until his retirement in 2002.

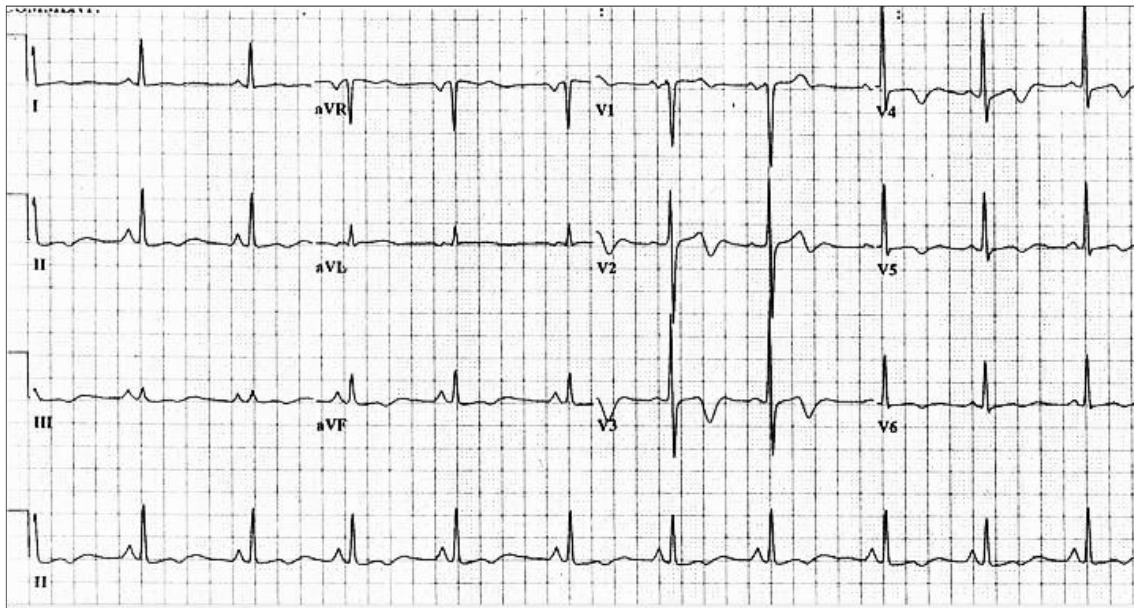
Wellens syndrome (1982) ECG pattern of deeply inverted or biphasic T waves in V2-3, which is highly specific for a critical stenosis of the left anterior descending artery (LAD).

Dr. de Zwaan, Bär and Wellens from the University of Limburg in Maastricht, The Netherlands, described a syndrome that came to be known with the eponym "Wellens' Syndrome" (de Zwaan C et al, 1982), that indicates proximal critical obstruction in the anterior descending artery, characterized by:

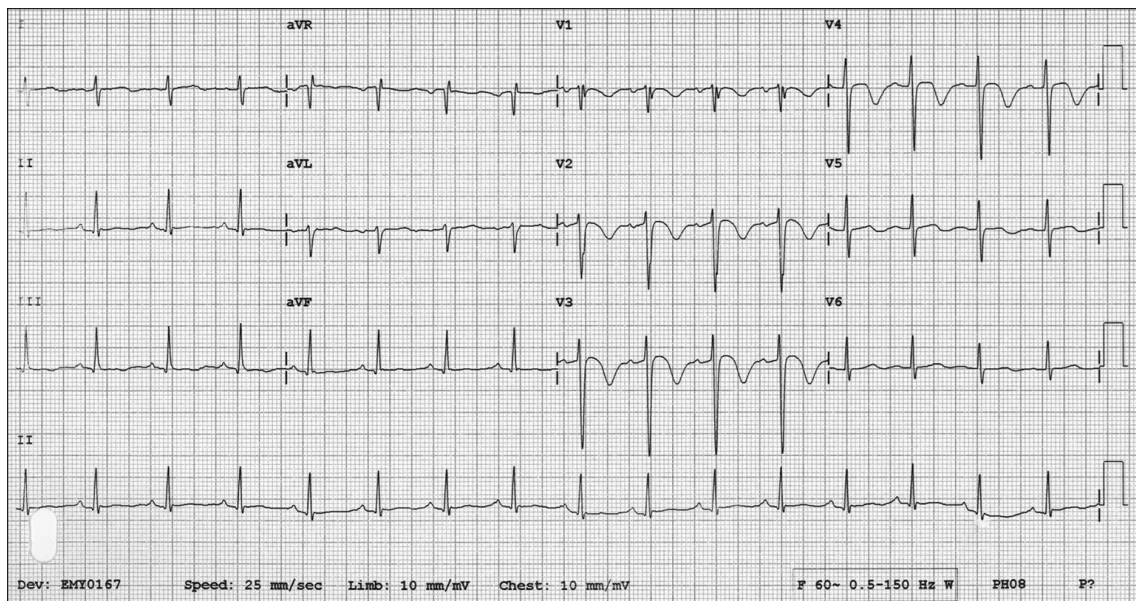
- Biphasic plus-minus T wave with inversion of the final portion (Type 1);
- Deeply inverted T wave in V1 and V2 (type 2);
- ST segment with no elevation or discretely elevated;
- Absence of the loss of voltage in the R wave;
- Normal or discretely elevated enzymes.

When not identified or poorly treated, it quickly leads in 8.5 days to anterior infarction. These patients should never go to previous ergometer test and yes directly to coronary angiography.

Wellens Wellens Syndrome Type 1



Wellens Wellens Syndrome Type 2



Awards

Pioneer In Cardiac Pacing And Electrophysiology 1995.

Distinguished Teacher 2000 by North America Society of Pacing and Electrophysiology.

Recently he was knighted by the Queen of The Netherlands.

Wellens has indeed provided a higher standard of excellence in the world of arrhythmology.

One of the most recent interest was internal cardioversion in atrial fibrillation. He stimulated the general interest in the atrial fibrillation and in the development of an implantable atrial defibrillator. Consequently, he headed the investigator group and wrote the key paper on the implantable atrioverter for the treatment of atrial fibrillation. This could not have been done without his previous fundamental investigations on arrhythmic mechanism and effects of therapeutic interventions in human heart diseases. Thus, it seems more than justified that Dr. Wellens was awarded among many other honors and prizes.

Some published books





References

de Zwaan C, Bär FW, Wellens HJ. Characteristic electrocardiographic pattern indicating a critical stenosis high in left anterior descending coronary artery in patients admitted because of impending myocardial infarction. *Am Heart J.* 1982 Apr;103(4 Pt 2):730-6.