Prinzmetal's angina pectoris

Prinzmetal's angina pectoris (variant AP, vasospastic AP, angina pectoris inversa) is a specific type of angina pectoris.

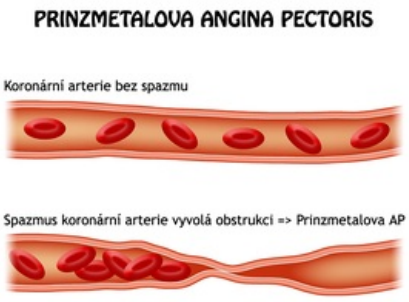
- Occurs as a result of '*spasm* of epicardial coronary vessels (spasm can affect two or more coronary vessels at the same time).
- On EKG we observe **transient ST segment elevation**'.

It was first described in 1959 by the American cardiologist Myron Prinzmetal.[1]

Etiopathogenesis

Vasoconstrictive stimulus (histamine, serotonin, ergonovine, acetylcholine, noradrenaline, blood pH) + local hyperreactivity of coronary arteries to vasoconstrictive stimulus → epicardial spasm coronary arteries.[2][3]

Most coronary spasms are clinically manifested as angina pectoris and resolve spontaneously. However, longer-lasting spasms can result in myocardial infarction, arrhythmia or sudden cardiac death.[3]



Prinzmetal's AP

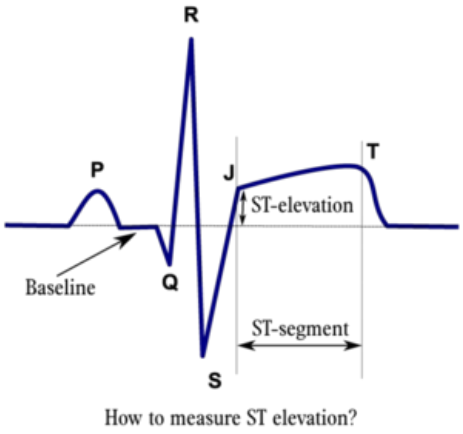
Clinical symptoms

A typical symptom is **angina**. Their occurrence is often significantly higher depending on the weather and season; they are more common in autumn and winter in dry weather. Prinzmetal's AP can also cause a variety of **arrhythmias**' (from AV block to ventricular fibrillation).[3]

Diagnosis[2][3]

- Prinzmetal's AP is **not** tied to physical activity. Angina occurs **most often at night** (median is 4 am).
- During an episode of angina, we observe *ST elevation* (or ST depression, inversion or pseudonormalization of the T wave) on the ECG. Holter monitoring can be used to capture ST elevation.
- **Provocation tests**: provocation with acetylcholine, methacholine, methylergonovine; provocation by exercise, cold, hyperventilation (hyperventilation echocardiography – the patient is allowed to hyperventilate during the echocardiography, which can initiate a coronary spasm, which is subsequently manifested by a disturbance in the kinetics of the ischemic region of the myocardium).

In the case of a negative coronary angiographic examination, ST elevation capture during the attack is sufficient for the diagnosis of Prinzmetal's AP.



ST elevation is measured at the so-called J-point

Treatment

Pharmacological therapy is similar to classical AP. Antiplatelet therapy is controversial.

- **Healthy lifestyle + elimination of provoking factors**' (smoking, alcohol, cocaine, emotional stress, hyperventilation, hypomagnesemia, severe cold).
- **Pharmacotherapy** (calcium channel blockers, nitrates, α-blockers).
- **Intracoronary stenting**.
- **Sympathectomy** (in resistant patients).

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Links

Related Articles

- Angina pectoris
- Sudden Cardiac Death

- Heart-attack
- Cardiotonics

References

1. PRINZMETAL, M – KENNAMER, R – MERLISS, R. Angina pectoris. I. A variant form of angina pectoris; preliminary report. *Am J Med* [online]. 1959, vol. 27, p. 375-88, Available from <https://www.ncbi.nlm.nih.gov/pubmed/14434946>. ISSN 0002-9343.
2. FEDORCO, Marian. , et al. Variant (Prinzmetal's) angina as a less frequent cause of cardiac syncope. *Cor et Vasa.* 2008, y. 50, vol. 9, p. 348-351, ISSN 1803-7712.
3. ROCK, T .. , et al. Malignant arrhythmia in a patient with variant (Prinzmetal's) angina pectoris. *Inside Medicine.* 2007, y. 53, vol. 6, p. 724-728, ISSN 0042-773X.

References

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- VOKURKA, Martin. *The Great Medical Dictionary.* 8. edition. Prague : Maxdorf, 2009. 1143 pp. ISBN 978-80-7345-166-0.