

About atrial infarction – 2009

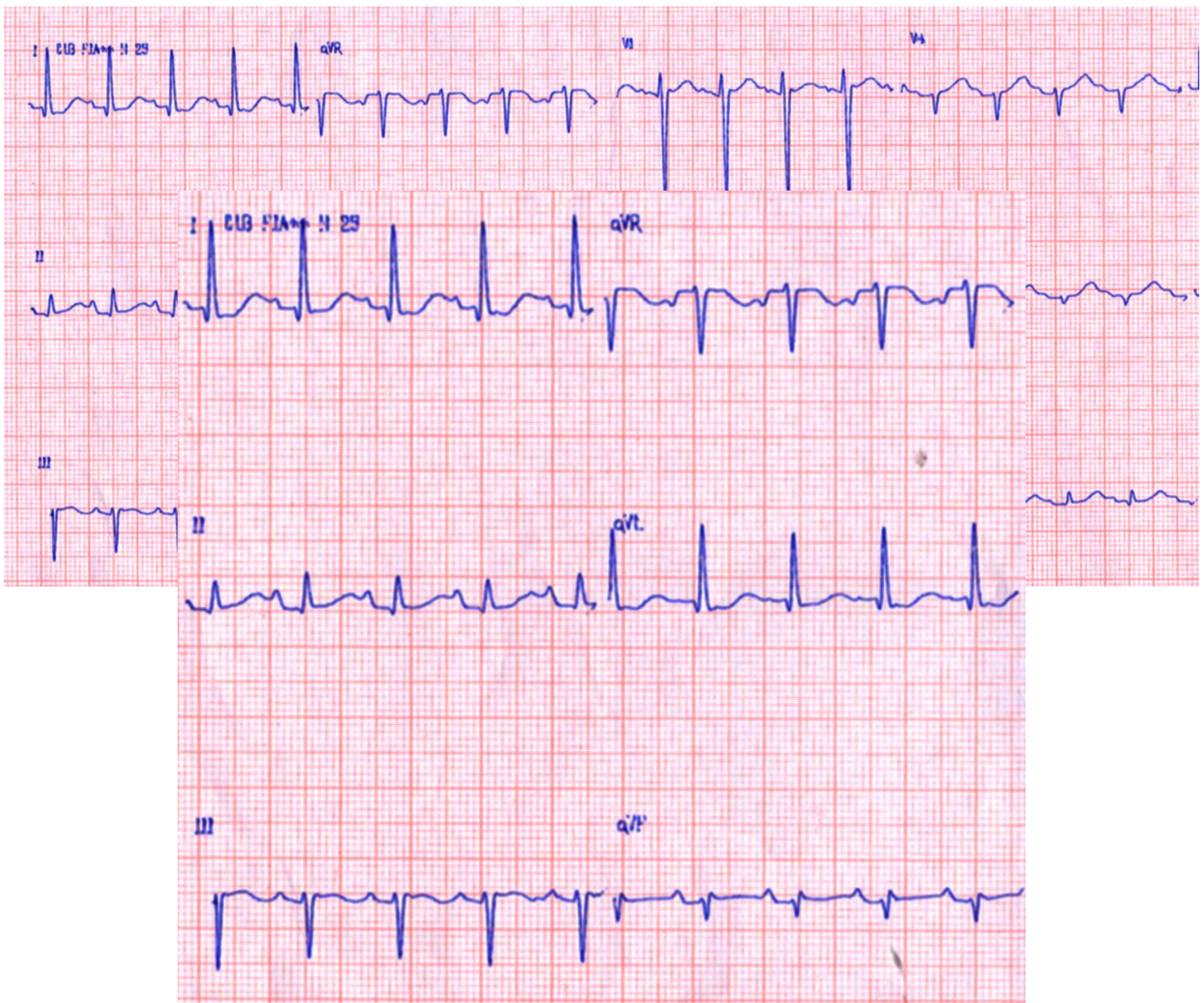
Dr. Raimundo Barbosa Barros & Dr. Andrés R. Pérez Riera

Dr. Andrés, você concorda com o diagnóstico?

Paciente de 37 anos portadora de Estenose aórtica que foi submetida à troca valvar (mecânica). Como o anel aórtico era muito pequeno a prótese determinou uma oclusão dos óstios coronarianos dificultando a saída de perfusão. O cirurgião optou pela revascularização com enxertos de safena para DA, Cx e CD. Dois meses depois ela retornou com sintomatologia compatível com isquemia miocárdica e elevação dos marcadores de necrose (CK-MB). A cintilografia foi compatível com defeito de perfusão na parede inferolateral. O ECO revelou hipocinesia lateral. Pericárdio normal. O CATE revelou estenose parcial da PVS para MgCx

O que você acha? Na minha opinião trata-se de uma caso + lateral que não foi diagnosticado.

Raimundo Barbosa Barros





OPINIONES DE COLEGAS

Prezados friends: Novamente Raimundo encaminha-nos estas duas perguntas about this case.

Tem infarto atrial?

Tem IM lateral?

Aquele que pense que sim, favor argumente com clareza os critérios de IM atrial.

Andrés R. Pérez Riera.

Estimado Dr. Pérez Riera, me gustaría saber si usted me puede explicarnos acerca del diagnostico ECG del infarto atrial.

De ante mano se lo agradezco

Atentamente y saludos

Claudio Santibáñez Catalan

Electrofisiologo- Clinica Alemana- Puerto Varas- Chile

Jefe de Cardiologia

Dear Claudio here the answer

ATRIAL INFARCTION

Infarction of the cardiac atria occurs more frequently than is commonly considered. Ischemic damage to the atrial myocardium is usually associated with infarction of cardiac ventricles, but isolated infarction of an atrium can occur and may be of clinical significance (1).

Atrial infarction is rarely diagnosed before death because of its characteristically subtle and nonspecific electrocardiographic findings.

Atrial infarction is a neglected ECG sign with important clinical implications.

These findings may be overshadowed by changes associated with concomitant ventricular infarction (2).

ECG diagnosis criteria

PR (PRs), PQ segment (PQs), STa segment or PTa-segment: it stretches from the end of P wave to the onset of QRS complex. Displacement of this segment (depression or elevation), which represents part of the atrial ST (Sta) segment only ostensive when associate with AV block as a consequence of atrial infarction Usually, PRs (end of P wave up to QRS complex onset), ST (from J point or the end of QRS up to the beginning of the T wave) and Tps (from the end of the T wave up to the onset P wave of the following cycle) segments are at the same level. Ja point: Point of junction between the end of the P wave and the onset of PRs. Normal location of atrial repolarization (Ta or TP wave). It coincides with ventricular depolarization (QRS complex), what explains its absence for being concealed by the ventricular phenomenon.

The 3 segments PRs, ST and TPs normally are at the same level

Ta wave may cause falsely positive strain tests in the presence of important PR segment depression in maximal strain, longer time of exercise and maximal strain faster than those truly positive, absence of effort-induced pain and P wave of voltage higher in maximal strain.

In acute right ventricular MI high degree AV block is present in almost half of the cases.

STa segment elevation may produce a diagnostic monophasic pattern during the early stage of ventricular ischemia.

1) Depression of the STa segment alone is not a reliable sign unless the degree of depression is marked.

2) P shape with M or W morphology during the acute MI episode.

3) Frequently atrial arrhythmias (35% of cases): Higher incidence of supraventricular arrhythmias in acute atrial fibrillation compared with ventricular infarction, atrial flutter, supraventricular tachycardia, changing pacemaker, junctional rhythm, sinus bradycardia, and AV conduction disturbances. Ischemia of the sinus node due to coronary occlusion proximal to the origin of the sinus node artery is a likely cause of arrhythmias⁴

4) Atrial arrhythmias (present in 35% of cases): ischemia of the sinus node due to coronary occlusion proximal to the origin of the sinus node artery is a likely cause of arrhythmias⁵.

5) Pump failure of the right and left ventricle

6) Atrial wall rupture

7) Thromboembolization (4)

LIU CRITERIA FOR ATRIA INFARCTION

I) MAJOR CRITERIA

1) PRs elevation $>0.5\text{mm}$ in leads V5 and V6 with reciprocal depression of PRs in V1 and V2 leads.

2) PRs elevation $>0.5\text{mm}$ in leads I with reciprocal depressions in II and III.

3) PRs depression $>1.5\text{mm}$ in precordial leads and 1.2mm in I, II, associated with any atrial arrhythmia.

II) MINOR CRITERIA

1) Abnormal P waves, flattening of P-wave in M, flattening of P-wave in W, irregular or notched P wave.

References

1) Cunningham KS, Cardiovasc Pathol. 2008; 17:183-185.

2) Shakir DK.et al.Can J Cardiol. 2007;23:995-997.

3) Kyriakidis M. Chest. 1992;101:944-947

4) Kyriakidis M. Chest. 1992;101:944-947

5) Neven K, et al. J Cardiovasc Electrophysiol. 2003;14:306-308

6) Liu CK, et al. Circulation 1961;23:331-338.

Andrés R. Pérez Riera