

Phaechromacytoma Associated with Fatal Myocardial Infarction

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Pheochromocytoma is a rare tumor found in approximately 2 individuals per million of the population. In 90%, it arises from the chromaffin cells of the adrenal medulla, which secrete catecholamines-epinephrine and norepinephrine. It has been called the 10% tumor - 10% bilateral, 10% outside the abdomen, 10% malignant [1], 10% in children and people with a family history. The secretion of catecholamines has a sympathomimetic action-producing headache, palpitations excessive sweating, tremulousness, chest pain. A classical presentation is paroxysms of hypertension. The catecholamines are excreted as vanillyl mandelic acid.

Macroscopic features - well-circumscribed, homogenous grey-brown color. Histopathology-Cells tend to be grouped and separated by delicate vascularized septa. Finely granular cytoplasm. Reduce chrome salts resulting in a brown color (Fig.1)

We present a case of a 47-year-old man, who developed a discomfort in the central substernal area of the chest, while he was in church. This was accompanied with nausea, dry heaving, excessive sweating, and a headache. There were episodes of dizziness, confusion and tingling of the face. He was an insulin dependent diabetic and since the previous day he had had extremely elevated blood sugar levels despite a bolus of insulin. About 2pm., he developed labored breathing with wheezing. Boluses of Lopressor were administered in the Emergency Department and he was put onto a heparin and nitroglycerin drip, and, was given sublingual nitro glycerin - basic therapy for myocardial ischemia. Electrocardiogram showed borderline junctional depression and a bedside echocardiogram –showed an inferolateral hypokinesis with an ejection fraction of 40%.The tachycardia and diaphoresis persisted. Laboratory findings were consistent with myocardial infarction with increase of Troponin T- 2-80; B-type natriuretic peptide. 237; Creatine phosphokinase – 237; CK – MB 19.4 – 8.2%. There was worsening lactic acidosis. The blood pressure rose to 190/100 mmHg and 200/112mmHg on recheck; heart rate 140 per minute. The patient went into a cardiac arrest and did not respond to CPR.

Autopsy showed the presence of a pheochromocytoma in the left adrenal; myocardial infarction in the inferolateral portion of the left ventricle, pulmonary edema with foci of hemorrhage.

Histopathology-benign pheochromocytoma (Fig. 1); myocardial infarction 24 hours-Waviness of the myofibers (Fig.2); contraction bands of the myofibers (Fig 3); early polymorphonuclear cell infiltration (Fig.4).

This case illustrates the clinical presentation of the sympathomimetic effects of catecholamine secretion resulting in critical myocardial ischemia and fatal infarction.

References:

[1] S Siew, Microsc. Microanalysis. 4 (1998), p.1086.

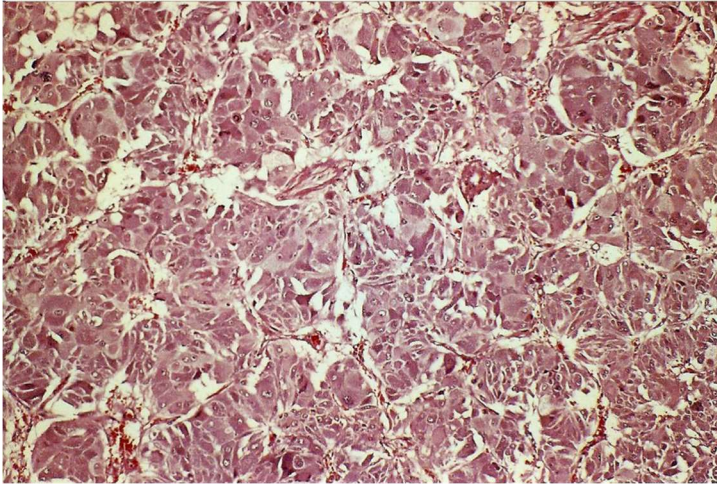


Figure 2. PHEOCHROMACYTOMA original magnification 400X

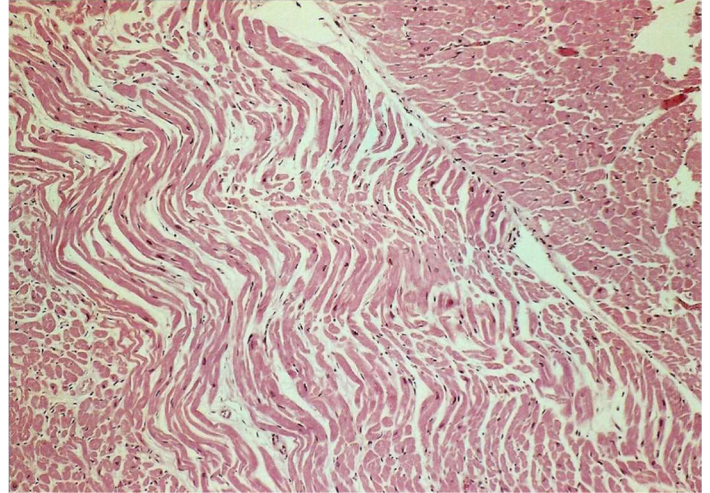


Figure 3. Waviness of the myofibers original magnification 400X

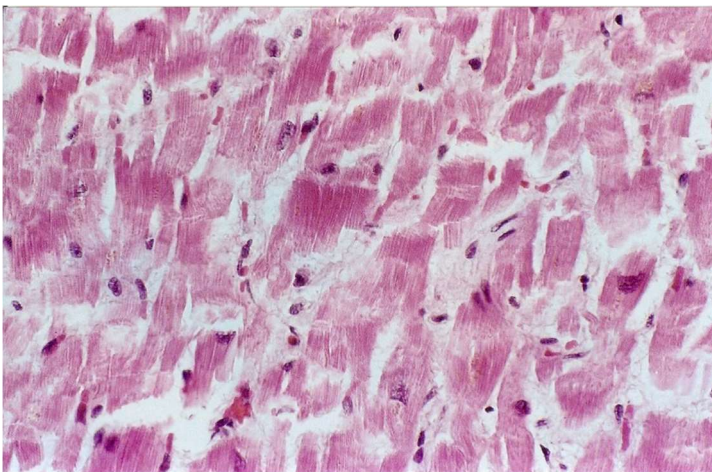


Figure 1. contraction bands of the myofibers original magnification 400X

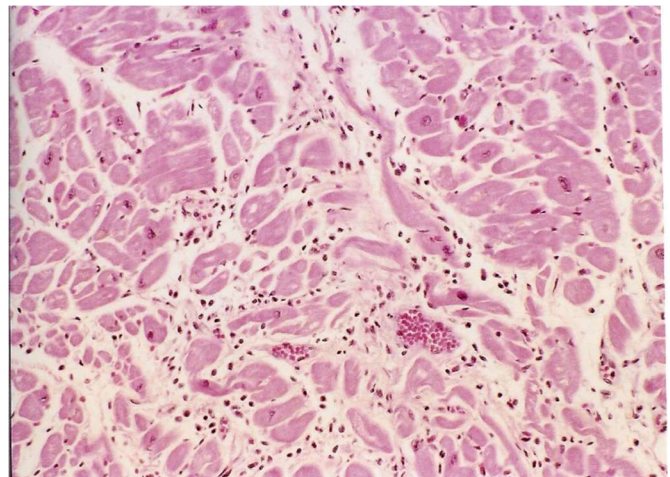


Figure 4. early polymorphonuclear cell infiltration