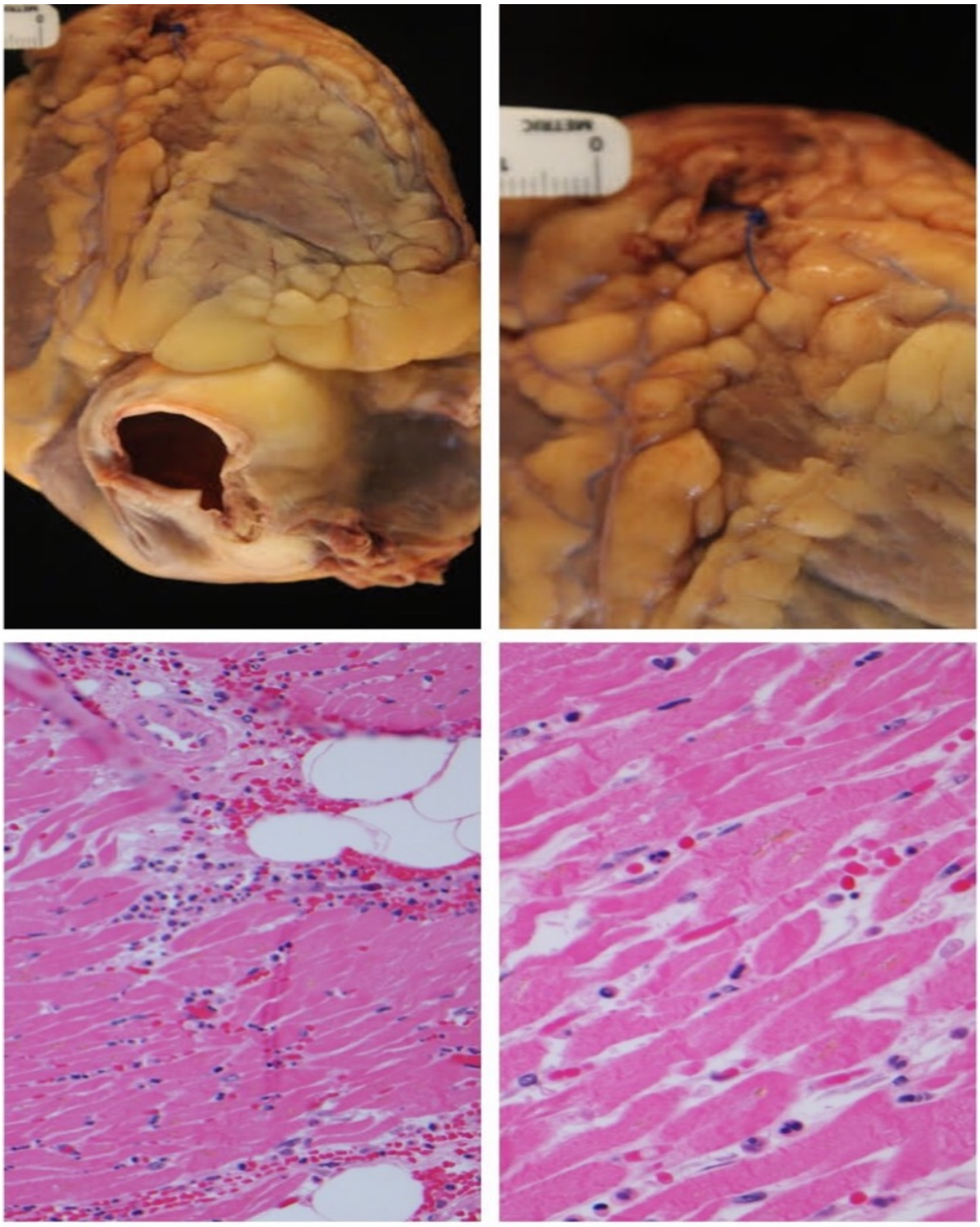
RUPTURED HEART OF A BROKEN HEART SYNDROME

Background : Takotsubo cardiomyopathy (TC) is normally associated with a favorable outcome. We report a case of a rare but fatal complication in a patient with TC.

Case: 66 year old female presented to the emergency department (ED) with chest pain. Her vital signs and electrocardiogram were normal. Laboratory testing identified an elevated troponin. Coronary angiogram and ventriculography revealed no significant stenosis and apical ballooning respectively suggesting TC. Echocardiogram showed hypokinesis of the ventricular apex sparing the basilar segments. Patient was discharged on guideline directed medical therapy. Patient was re-admitted to the ED 2 days later with cardiac arrest, bedside echocardiogram showed a large pericardial effusion with tamponade. An emergent pericardiocentesis failed but a thoracotomy revealed a large amount of blood and clot in the pericardial space. A large tear was identified posteriorly in the left ventricular apex, the attempt to suture was unsuccessful resulting in patient's death. An autopsy confirmed the left ventricular rupture.

Discussion : TC accounts for approximately 2 % of patients admitted for acute coronary syndrome. Cardiac rupture (CR) as a complication of TC is extremely rarely reported. Postmenopausal women are thought to have higher incidence of CR possibly due to low estrogen levels resulting in lack of myocardial wall compliance. Histopathology exhibits presence loss of nuclei, fused foci of coagulation necrosis, and contraction band necrosis at the rupture site.

Conclusion: CR has been considered a rare complication of TC. However it is now being increasingly recognized and therefore the incidence of CR might be higher than the current reported cases in literature. We need to identify high risk features for CR with TC early, in an effort to prevent such a fatal outcome.



1. Top left : Gross Specimen identifying ruptured left ventricle in the posterior aspect of the apex.
2. Top Right : Gross Specimen – Zoomed in - identifying ruptured left ventricle in the posterior aspect of the apex.
3. Bottom Left : Histopathology – Microscopic low power image showing coagulation necrosis, acute inflammation and hemorrhage with loss of myocyte nuclei
4. Bottom Right : Histopathology – Microscopic high power image showing contraction band necrosis, scattered neutrophils and hemorrhage.

References

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