Ventricular tachycardia as the initial symptom of cardiac hydatidosis

Yan-Mei Lu, Ling Zhang, Qiang Xing, Xian-Hui Zhou, Yao-Dong Li, Jiang-Hua Zhang, Tuerhong Zukela, Bao-Peng Tang

To the Editor: A 44-year-old female presented at the local hospital for repeated episodes of having palpitations, accompanied with cold sweats, amaurosis, vomiting, and limb weakness in the previous 2 months. An electrocardiogram indicated “ventricular tachycardia” when she was not feeling well. The symptoms alleviated significantly after injections of “amiodarone” (dose unknown), after which the patient was discharged. A local physician recommended ablation, so the patient was transferred to our hospital. The patient was generally healthy and had lived in a region with pastures. According to the patient’s self-report, she had been diagnosed as having liver hydatidosis 30 years ago, but had recovered after surgical treatment at the local hospital. Furthermore, the patient claimed to have no other medical history. No hematological abnormality was found after admission but 24-h Holter monitoring indicated frequent premature ventricular contractions. Color Doppler echocardiography suggested significant attenuation of contraction at the apex of the ventricular septum, with apical thrombus.

After admission, a definite diagnosis was confirmed with the help of an electrocardiogram: ventricular tachycardia [Figure 1A]. There was no symptomatic recurrent ventricular tachycardia, but ST segment depression and T wave inversion were observed in the electrocardiograph trace from the anterior wall lead, and cardiac ultrasound suggested attenuation of contraction at the apex of the ventricular septum with apical thrombus [Figure 1B]. Coronary computed tomography angiogram suggested that the coronary vessels and their lumens were normal, clearly eliminating the possibility of coronary heart disease. The principal question was about the origin of this thrombus and whether primary cardiomyopathy was suspected. To ascertain the condition of the myocardium, myocardial perfusion imaging was performed. The results indicated reverse movement of the apical wall of the left ventricle, formation of a ventricular aneurysm at the apex of the left ventricle, and anterior-lateral wall, posterior-lateral wall proximal to the apex, and ventricular septal myocardial infarction. The imaging technicians recommended positron emission tomography-computed tomography (PET-CT) scanning to evaluate the condition of the viable myocardium. From the results of the emission computed tomography (ECT) scan and the patient’s clinical manifestations, primary cardiomyopathy was excluded. Coronary heart disease was not considered as the cause of the symptoms and further PET-CT scanning to evaluate the viable myocardium was not recommended. Furthermore, there was a strong suspicion that the results of the ECT scan and cardiac ultrasonography were incorrect. The causes of the attenuated myocardial contraction, formation of the apical thrombus, and nature of the mass required clarification. Thus, cardiac magnetic resonance imaging was used for further investigation.

Myocardial magnetic plain scanning indicated significant thinning of the ventricular septum and apical myocardium. Enhanced scans suggested the presence of a cystic mass at the posterior apex of the left ventricle, no significant abnormal enhancement of enhanced lesions, with dimensions of the transverse section being 6.17 cm × 4.67 cm, all of which were consistent with manifestations of cardiac cystic hydatidosis. Due to the patient’s history of hepatic echinococcosis, it was concluded that the apical mass was hydatidosis when other aspects of the medical history were considered.[1] The hydatid cysts had attacked the ventricular septum and apical myocardium, causing adhesion of the outer membrane to the pericardium, which was the actual cause of the ventricular tachycardia. Enhanced abdominal CT was subsequently performed to investigate the presence of hydatidosis at other anatomical locations, the results revealing hepatic degenerative hydatidosis (multi ascomycete). The apex of the heart was within the scanning range of CT, and a low-density oval shadow was clearly seen, and eggshell calcification observed on the outer wall [Figure 1C], further confirming that the patient was suffering degenerative cardiac hydatidosis.

Thus, the patient was definitively diagnosed as having cardiac hydatidosis with hepatic hydatidosis, ventricular...
tachycardia occurring recurrently due to the hydatid cyst-invasion of the myocardium. Therefore, thoracotomy was suggested for its removal. The patient was transferred to the Department of Cardiac Surgery for “partial pericardial excision and hydatid cystectomy” (Figure 1D). The patient’s condition was monitored closely after surgery but no ventricular tachycardia was identified. Four months after the removal of the cardiac cyst, the hepatic hydatid cysts were removed. No symptomatic ventricular tachycardia was observed during the 16-month follow-up.

Declaration of patient consent

The authors certify that they have obtained the patient consent form. In the form, the patient has given her consent for her images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

Funding

This work was supported by a grant from the National Key R&D Program of China (No. 2016YFC0900905).

Conflicts of interest

None.

References

1. Deplazes P, Rinaldi L, Alvarez Rojas CA, Torgerson PR, Harandi MF, Romig T, et al. Global distribution of alveolar and cystic echinococcosis. Adv Parasitol 2017;95:315–493. doi: 10.1016/bs.apar.2016.11.001.

2. Kahlfuß S, Flieger RR, Roepke TK, Yılmaz K. Diagnosis and treatment of cardiac echinococcosis. Heart 2016;102:1348–1353. doi: 10.1136/heartjnl-2016-309350.

How to cite this article: Lu YM, Zhang L, Xing Q, Zhou XH, Li YD, Zhang JH, Zukela T, Tang BP. Ventricular tachycardia as the initial symptom of cardiac hydatidosis. Chin Med J 2019;132:2765–2766. doi: 10.1097/CM9.0000000000005220

Figure 1: Examination results of the patient. (A) ST segment depression and T wave inversion from the anterior wall lead of a normal ECG; tachycardic ECG indicated ventricular capture and atrioventricular dissociation, leading to a definitive diagnosis of ventricular tachycardia. (B) Cardiac ultrasound suggested attenuation of contraction at the apex of the ventricular septum with apical thrombus. (C) The white arrow suggests an irregular plump patchy “egg-shell” margin and a calcified cyst adhering to both normal and thin myocardium. (D) The figure suggests a mass at the left ventricular apex, affecting the myocardium proximal to the apex at the anterior, anterior-lateral and posterior-lateral walls, a ventricular septum and additionally suggests adhesion of the outer membrane and pericardium. ECG: Electrocardiograph.