Migrating Kirschner wire in the heart mimics acute coronary syndrome

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A 45-year-old man was referred for urgent coronary angiography due to recent onset chest pain and ST-segment elevations. Cardiac enzyme levels were slightly elevated. Coronary angiography showed normal coronaries but revealed a thin, pointed radiopaque object in the projection of the right ventricle moving synchronously with cardiac contractions (Panels A and B).

The origin of the foreign body was initially unclear; the patient had no penetrating chest injuries and no scars were seen on the chest wall. Further review of history revealed that 5 years earlier the patient underwent wire fixation of his right acromioclavicular joint.

We removed the wire from median sternotomy. Opening the pericardium revealed the sharp tip of the wire outside the myocardium, pointing at the right margin of the right ventricle, reaching the diaphragm with every heartbeat (Panel C). Inspection after removal confirmed that the foreign body was in fact a 6 cm long part of a Kirschner wire (Panel D).

We have obtained all prior patient documentation to establish a timeline for the migration of the pin from the shoulder to the heart. Review of annual screening chest X-rays confirmed that one of the Kirschner wires was not removed as planned, 3 months after surgery. We believe that the wire entered the venous system and was carried with the blood flow into the right ventricle.

According to our knowledge, this is the first documented case when the embolization of a broken Kirschner wire to the heart mimicked acute coronary syndrome and was detected during coronary angiography.