A 63-year-old male with hypercholesterolemia was admitted to the emergency department complaining of a 12-hour persisting typical central chest pain. He had experienced a blunt chest trauma while practicing judo 6 weeks earlier. On admission, the 12-lead ECG was consistent with acute anterior ST-segment elevation myocardial infarction (STEMI), and the patient received loading doses of aspirin, prasugrel, and unfractioned heparin. The urgent coronary angiogram (CA) showed an occlusion of the mid-left anterior descending (LAD) artery, with retrograde collateralization arising from the first diagonal branch, and absence of significant lesions in the left circumflex and right coronary arteries (Movie I in the online-only Data Supplement). Percutaneous coronary intervention to the LAD was attempted without possibility to access the distal LAD beyond the occlusion site, suggesting a chronic total occlusion (Movie II in the online-only Data Supplement). The procedure was stopped because the patient became symptom free without hemodynamical compromise. The final CA showed persisting occlusion of the mid-LAD and absence of coronary perforation (Movie III in the online-only Data Supplement). A transthoracic echocardiogram showed preserved left ventricular (LV) systolic function without wall motion abnormalities and a large subepicardial mass (40×45 mm) localized at the level of the LV anterior wall, suggestive of a voluminous hematoma associated with pericardial effusion and signs of peritamponade (Figure 1). A cardiac computed tomography (CT) demonstrated an occlusive coronary artery dissection of the mid-LAD extending through a voluminous subepicardial hematoma (SEH; 45×34 mm) surrounded by a thin cap, suggestive of reabsorption (Figure 2). The patient was initially managed conservatively. At day 3, the patient developed signs of cardiac tamponade, and it was decided to perform urgent cardiac surgery for surgical exploration and open pericardial drainage. Intraoperative inspection revealed a circumferential pericardial effusion compressing all 4 cardiac cavities and a large SEH localized at the level of the anterior interventricular groove and surrounded by areas of fibrous tissue, suggesting a chronic or subacute process (Figure 3). No active bleeding site was noticed, and a conservative management was decided. The postoperative clinical course was favorable. The control cardiac CT performed at day 16 showed stability of the SEH with signs of active reabsorption and a minimal residual pericardial effusion. A cardiac MRI performed at 2 months demonstrated the persistence of a large encapsulated hematoma (33×23×53 mm) localized between the myocardium and the pericardial space at the level of the LV anterior wall (Figure 4). At 1-year follow-up, the patient remained free from cardiovascular symptoms. The control cardiac MRI showed preserved LV systolic function without wall motion abnormalities, absence of late gadolinium enhancement, and regression of the organized SEH (20×29×34 mm).

SEH is a rare condition, but it is associated with poor clinical outcomes.1 SEH corresponds to a form of subacute partial cardiac rupture caused by a hemorrhagic dissection among spiral myocardial fibers that creates a cavity limited by the myocardium. SEH rarely occurs spontaneously and is generally secondary to cardiac or chest trauma, cardiac surgery, percutaneous coronary intervention, or acute STEMI.2 The optimal management of SEH remains controversial because few data are currently available on long-term follow-up of the different treatment strategies. Surgical treatment is traditionally recommended, but it is generally not performed until complications occur.3 Conservative management of clinically stable patients, including noninvasive imaging follow-up using TTE, cardiac CT, or MRI to confirm the resolution of the SEH and the absence of mechanical complications, has been associated with excellent mid- to long-term clinical outcomes.4 Recently, successful percutaneous coronary coil embolization of an intramyocardial hematoma after STEMI has been also reported.5 We report here on a rare case of a patient with a voluminous SEH of the left ventricle, likely secondary to a traumatic LAD dissection after recent blunt chest trauma, which was successfully managed conservatively with an excellent long-term outcome. In our case, the concomitant use of potent antithrombotic agents and progression of coronary guidewires during primary percutaneous coronary intervention likely may have worsened the subepicardial bleeding, leading to pericardial effusion and cardiac tamponade. Our case highlights the important role of modern noninvasive imaging techniques for the diagnosis and management of uncommon mechanical complications that may present as acute STEMI.
None.

References


Figure 1. Two-dimensional transthoracic echocardiogram in a parasternal short-axis view demonstrating a large 40x45mm homogenous mass localized at the level of the mid-left ventricular wall (arrow).

Figure 2. Left. Cardiac computed tomography (CT) in a short-axis view demonstrating the coronary artery dissection of the mid-left anterior descending artery (LAD) extending through a voluminous subepicardial hematoma (arrow) localized in the anterior interventricular groove. Right, Three-dimensional cardiac CT reconstruction in a long-axis view showing the displacement of the LAD course (arrow) by a voluminous subepicardial hematoma.
Figure 3. Intraoperative inspection showing the large subepicardial hematoma localized at the level of the anterior interventricular groove and surrounded by areas of fibrous tissue (arrow).

Figure 4. Cardiac MRI in a long-axis view demonstrating the subepicardial hematoma localized in the anterior interventricular groove (arrow).
Subepicardial Hematoma of the Left Ventricle Mimicking Acute Anterior Myocardial Infarction
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Hematoma subepicárdico del ventrículo izquierdo similar a infarto agudo de miocardio anterior

Sophie Degrauwe, MD; Pierre Monney, MD; Olivier Muller, MD, PhD; Patrick Ruchat, MD; Salah D. Qanadli, MD, PhD; Eric Eeckhout, MD, PhD; Juan F. Iglesias, MD

Un hombre de 63 años con hipercolesterolemia fue admitido en el departamento de emergencias; se quejaba de un dolor persistente central en el pecho. Había sufrido un traumatismo torácico cerrado mientras practicaba judo 6 semanas antes. En la admisión, el ECG de 12 derivaciones era consistente con infarto agudo de miocardio anterior con elevación del segmento ST (IAM-EST), y el paciente recibió dosis de carga de aspirina, prasugrel y heparina no fraccionada. El angiograma coronario (AC) de urgencia mostró una oclusión en la arteria descendente anterior izquierda (DAI), con colateralización retrógrada que surgía de la primera rama diagonal, y ausencia de lesiones significativas en las arterias coronarias derecha y circumflexa izquierda (Película I del Suplemento de Datos solamente online). Se intentó intervención coronaria percutánea o IAM-EST agudo. Recientemente, también se ha informado el éxito de la bobina de gadolinio y regresión del HSE organizado (20 × 29 × 34 mm).

El manejo óptimo de HSE aún es controvertido ya que actualmente se dispone de pocos datos sobre seguimiento a largo plazo de las diferentes estrategias de tratamiento. Tradicionalmente se recomienda el tratamiento quirúrgico, pero por lo general no se lo pone en práctica hasta que se presenten las complicaciones. El manejo convencional de pacientes clínicamente estables, incluyendo seguimiento no invasivo con imágenes usando ETT, TC cardíaca o RM para confirmar la resolución del HSE y la ausencia de complicaciones mecánicas, ha sido asociado con excelentes resultados clínicos de mediano a largo plazo. Recientemente, también se ha informado el éxito de la bobina para embolización coronaria percutánea de un hematoma intramiocárdico usando ETT y RM. En un caso poco frecuente de un paciente con un HSE voluminoso del ventrículo izquierdo, probablemente posterior a una disección traumática de DAI luego de traumatismo torácico cerrado reciente, se manejó exitosamente en forma convencional con resultados clínicos deficientes. HSE corresponde a una forma de rotura cardíaca parcial subaguda causada por una disseción hemorrágica en las fibras miocárdicas en espiral que crea una cavidad limitada por el miocardio. El HSE en raras ocasiones se presenta de manera espontánea y es generalmente posterior a traumatismo cardíaco o torácico, cirugía cardíaca, intervención coronaria percutánea o IAM-EST agudo. El manejo convencional de pacientes clínicamente estables, incluyendo seguimiento no invasivo con imágenes usando ETT, TC cardíaca o RM para confirmar la resolución del HSE y la ausencia de complicaciones mecánicas, ha sido asociado con excelentes resultados clínicos de mediano a largo plazo. Recientemente, también se ha informado el éxito de la bobina para embolización coronaria percutánea de un hematoma intramiocárdico luego de IAM-EST. Informamos aquí sobre sobre un caso poco frecuente de un paciente con un HSE voluminoso del ventrículo izquierdo, probablemente posterior a una disección traumática de DAI luego de traumatismo torácico cerrado reciente, que se manejó exitosamente en forma convencional

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con un excelente resultado a largo plazo. En nuestro caso, el uso concomitante de potentes agentes antitrombóticos y la progresión de guías coronarias durante la intervención coronaria percutánea primaria probablemente pudieron haber empeorado la hemorragia subepicárdica, dando lugar a derrame pericárdico y taponamiento cardíaco. Nuestro caso destaca la importancia de las técnicas modernas de imágenes no invasivas para el diagnóstico y manejo de complicaciones mecánicas no comunes que pueden presentarse como IAM-EST agudo.

Declaraciones

Ninguna.

Bibliografía


Figura 1. Ecocardiograma transtorácico bidimensional en una vista paraesternal de eje corto que muestra una extensa masa homogénea de 40 x 45 mm localizada a nivel de la pared ventricular izquierda media (flecha).

Figura 2. Izquierda, Tomografía computada (TC) cardíaca en una vista de eje corto que muestra la disección arterial coronaria de la arteria descendente anterior izquierda media (DAI) que se extiende en un hematoma subepicárdico voluminoso (flecha) localizado en el surco interventricular anterior. Derecha, Reconstrucción en TC cardíaca tridimensional en una vista de eje largo que muestra el desplazamiento del curso DAI (flecha) por un hematoma subepicárdico voluminoso.
Figura 3. Inspección intraoperatoria que muestra el extenso hematoma subepicárdico localizado a nivel del surco interventricular anterior y rodeado por áreas de tejido fibroso (flecha).

Figura 4. RM cardíaca en una vista de eje largo que muestra el hematoma subepicárdico localizado en el surco interventricular anterior (flecha).