IMAGES FOR SURGEONS

Stabbing injury of the left ventricle

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A 28-year-old male was stabbed with a knife in his left chest after arguing with another young man. The assailant pulled out the knife and ran away. The victim was sent immediately to our hospital, which was approximately 3 km from the scene. On arrival, he was extremely agitated. Sinus tachycardia up to 140 beats per minute was noted. Initial blood pressure was 60/40 mmHg. Ultrasound revealed massive left hemothorax and cardiac tamponade. He was rushed to the operating room. An emergent left anterior thoracotomy was performed with an incision just above the level of the knife entry wound. A minor left lower lung laceration was noted. After opening the pericardium, a

Figure 1  After an emergent left anterior thoracotomy, a large left ventricular defect was observed just left to the left anterior descending artery (LAD). After inserting a finger into the opening, a purse-string suture was placed around the finger. Bleeding stopped after snaring the suture.

Figure 2  After cardiopulmonary bypass via left femoral vessels, a left ventricular venting catheter was inserted through the apex. No more blood came out through the stab wound of the heart. The broken line indicates the entry route of the knife.

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large left ventricular wound, which was located just left of
the left anterior descending artery, blood gushed out. One
finger was inserted into the hole to slow down the bleeding.
A purse-string suture with pledgeted prolene was then
applied to the surrounding myocardium to seal off the
bleeding completely but temporarily (Fig. 1). The bleeding
stopped, and the patient’s vital signs were stabilized. Left
femoral vessels were then exposed for cardiopulmonary
bypass. In order to attain a bloodless environment and
facilitate a delicate repair, a left ventricular venting
catheter was inserted through the apex (Fig. 2). The heart
wound was repaired successfully with Teflon felt rein-
forcement (Fig. 3). The patient regained consciousness 3
hours after the operation, without any neurological
sequelae.

Stab injuries to heart are not infrequent around the
globe. Generally, the prospect of survival is dismal in case
of a large left ventricular injury. In our experience, a finger
is better than other kinds of devices, including a Foley
catheter, to control the bleeding temporarily. The finger
can accommodate the beating of a hyperdynamic heart,
whereas a Foley catheter still allows blood to gush out
between systole and diastole. This maneuver is also easy to
perform in the scenario of an emergency department
thoracotomy.

Figure 3  Heart wound was repaired successfully on both
sides using Teflon felts.