

SUCCESSFUL MANAGEMENT OF A PATIENT WITH STAB INJURY TO THE HEART: A CASE REPORT

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SUMMARY

This is a case report of a patient with a stab injury into the heart. It highlights the successful management in view of the limited facilities and personnel in a district hospital. This may probably be the first operation of its kind in the country.

INTRODUCTION

The Taiping District Hospital has about 600 beds. The major disciplines are staffed by consultants.

CASE HISTORY

On 22 May 1984, an 18-year-old male was admitted to the casualty department following a fight. Physical examination revealed a conscious but restless, pale-looking patient. Blood pressure recorded then was 70 mmHg systolic. Diastolic blood pressure was unrecordable. Pulse rate was 110 per minute.

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An oval-shaped stab wound was noted over the left, fourth intercostal space lateral to the sternal edge. Another triangular-shaped stab wound was seen over the left hypochondrium.

Other relevant signs were that of diminished air entry with crepitations over the left chest.

Pre-operative Management

Resuscitative measures including the setting up of two intravenous drips with group and cross-matching of blood were carried out. Abdominal paracentesis showed evidence of intra-abdominal bleeding.

Within 20 minutes of admission, the patient was wheeled into the operating room. While being anaesthetised, the patient had a cardiac arrest. The patient was immediately intubated and turned over to the right lateral position. Without scrubbing, gowning and draping, a left thoracotomy was performed.

There was a hole over the anterior aspect of the pericardial sac which was filled with blood. A longitudinal incision into the pericardial sac was made in front of the left phrenic nerve. The cardiac tamponade was released and internal cardiac massage successfully carried out.

At this point, blood was seen spurting out through a 1 cm wide stab wound over the anterior aspect of the heart. Two simple interrupted

sutures of 3⁰ prolene were placed and tied. With the bleeding controlled, plegetted sutures were improvised from cotton drape material and this was used to reinforce the above sutures. Inspection of the rest of the heart revealed another 1 cm wide stab wound over the base of the heart. It was similarly repaired.

Care was then taken to scrub and gown; skin prepped and draped. At the same time intravenous blood and normal saline solution were rapidly transfused.

Next, attention was turned to the 1 cm wide triangular stab wound over the left hypochondrium. With the patient still in the right lateral position, a left Kocher incision was made. There was a haematoma in the greater omentum and a stab wound with haematoma in the left psoas muscle. There was a serosal tear in the fundus of the stomach adjacent to the stab wound in the left diaphragm.

Drains were placed in the abdominal, chest and pericardial sac. The chest and abdominal incisions were closed in the standard way.

Post-operative Management

Post-operatively, the blood pressure fluctuated between systolic pressure of 50 mmHg and 90 mmHg. A central venous line was set up and intravenous dopamine started.

The patient was not extubated — he was connected to a very basic ventilator (East Radcliffe model). Blood pressure, pulse rate and urine output was monitored every five minutes. Using these vital signs and with frequent assessment of warmth of extremities, the degree of vasoconstriction and colour of patient, the ventilator, dopamine drip and intravenous drip were adjusted accordingly. At this point the systolic blood pressure was brought up to between 90 mmHg and 120 mmHg. The pulse rate was between 100 to 120 per minute. The patient was ventilated at 28 respirations per minute.

In addition hydrocortisone 1 g stat and 250 mg every six hours was given. Cefoperazone 2 g stat and 1 g twice a day was also given.

Progress

About six hours after the operation the blood pressure was satisfactorily maintained between 100 mmHg and 120 mmHg; systolic and pulse rate had dropped to about 90 per minute and regular.

The extremities felt warm with good pulse volume.

With the above vital signs satisfactorily maintained the patient was disconnected from the ventilator and extubated. Intravenous dopamine was also weaned off from the patient. The drainage tubes were removed on the third post-operative day.

The patient's vital signs continued to remain within normal limits. There was a slight temperature of 37.5°C but returned to normal after five days. There was no evidence of wound infection.

There was no clinical evidence of cerebral damage nor biochemical evidence of renal damage. Electrocardiogram did not reveal any myocardial damage. Initially there was a systolic murmur which disappeared on the fifth post-operative day.

The patient was discharged after a month of convalescence and had remained well on follow-up without the need for any medication.

DISCUSSION

Trauma to the heart are of two types: penetrating and non-penetrating. Left ventricular injury being worse than right. Gunshot wounds have a higher overall mortality compared to stab wounds.¹

Pericardiocentesis was previously the treatment of choice for traumatic cardiac tamponade.²

Now the treatment of choice should be immediate thoracotomy and decompression of pericardial sac by removal of blood or clots, followed by repair of cardiac wounds.³ This will solve the problem of recurrent tamponade, residual clotted haemopericardium and missed injury of the heart.

Thus the patient had two stab wounds. One through the chest and the other through the abdomen. The one through the chest passed through the left fourth intercostal space into the anterior aspect of the heart and out through its base and went through the diaphragm and incised the serosal layer of the fundus of the stomach.

CONCLUSION

Most of the reports on successful management of penetrating injuries to the heart comes from western literature where facilities like rapid ambulance services, and ample and trained personnel abound.

This may probably be the first case in this country that a successful attempt has been made to save the life of such a patient. And this is made even incredible that it occurred in a district hospital.

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