Resuscitation from Cardiac Arrest Due to Acute Coronary Thrombosis*

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Introduction

Death from coronary heart disease may be due to a disorganization of rhythm resulting in arrest more often than it is due to actual failure or to rupture of the myocardium.4,5 This probably means that some cases of death from coronary thrombosis could be saved if cardiac massage were available at the time of the fatal heart attack. Lending support to this idea are two recent reports of cardiac arrests secondary to myocardial infarction with successful resuscitation by Beck6 and Regan6. This article reports a similar case in which a hospital employee stricken in the hospital corridor was resuscitated from a cardiac arrest secondary to myocardial infarction.

Mr. C. S., an Ancker Hospital orderly, was found unconscious in the main hallway of the hospital on March 19, 1956, at 4:53 P.M. Although his fall was not witnessed, he was discovered almost immediately because of heavy traffic in the hall. First examination revealed no respirations and no heart sounds. He was given artificial respiration and immediately taken to the receiving room where oxygen was administered by mask. Again no heart sounds were audible so 1 cc of 1:1000 epinephrine was injected directly into the left ventricle but there were still no heart tones. The chest was then opened through a left thoracotomy incision in the third interspace. The pericardium was incised and the heart observed to be in standstill. Cardiac massage was begun at a time estimated to be three and one-half minutes after arrest occurred.

After a few minutes of massage, ventricular fibrillation set in so molar sodium lactate was injected into the left ventricle6 and electric defibrillation carried out.7 Regular pulsations began promptly and persisted. Spontaneous respirations started as soon as cardiac massage was initiated.

After closing the chest, he was taken to the post-operative ward, but it was necessary to reopen the wound one hour later because of a bleeding vessel in the wound.

Forty-eight hours later he responded to questions and was able to talk coherently. He became oriented and it was felt that he suffered little, if any, brain damage. But in spite of intensive antibiotic therapy, his wound became infected. Chest x-ray films were essentially clear until March 31, 1956, when evidence of pneumonia was seen. Tracheotomy and secondary closure of the infected wound were carried out on March 31, but on April 1 he expired.

Electrocardiogram on March 24, the sixth day after the attack, revealed an S-T elevation in Leads 1 and in the right precordial leads. This was interpreted as suggesting a possible recent anterior infarction. (Leads 1 and V1, V2, V3, V4.)

Post mortem examination revealed bilateral bronchopneumonia, atelectasis, pulmonary congestion and edema. The coronary arteries showed areas of occlusion in the left circumflex branch and the posterior descending branch of the right coronary. There was an area of hyperemic motting in the base of the anterior portion of the interventricular septum.

Discussion

The technique of cardiac massage and defibrillation has been described many times4, 6, 7. On the cases we have done, the injection of adrenalin has been helpful. We have also used several cc's of calcium gluconate followed by 1/2 to 1 cc. 1:1000 adrenalin. This usually seems to make the fibrillation active and consequently facilitate defibrillation.

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The fact of this temporary survival and the reported permanent survivals \(^5\) \(^6\) adds weight to the suggestion that a few cases of cardiac arrest secondary to coronary thrombosis can be saved. Cases which occur in the hospital, of course, are probably the ones that will be found early enough to resuscitate. In our patient the thoracotomy was done by an intern. His quick thinking and aggressive attitude made the resuscitation possible. Since this time, three other attempts have been made by the intern-resident staff. It would seem to be worthwhile to prepare interns and residents for this emergency if success is to be achieved. We have now set up sterile cardiac arrest packs with the necessary equipment and have one on each of the surgical floors and in the receiving room. Doubtless, these packs should also be kept on each of the medical floors where coronary attacks are more likely to occur.

Although two case reports with resuscitation from otherwise fatal coronary thromboses have appeared, failures may occur even when cardiac massage is instituted quickly. The case we report represents one in which a wound infection probably played a major role in the patient’s death. Recently we had another case of cardiac arrest which was resuscitated successfully only to die two hours later of a ruptured myocardium in the area of infarction.

CONCLUSION

1. A case of cardiac arrest due to myocardial infarction in a hospital employee with successful resuscitation and survival for two weeks is presented.

2. Some cases of cardiac arrest secondary to an infarct probably can be resuscitated since death in these cases is often due to a disturbance of rhythm rather than myocardial failure.

3. An active interest in therapy for cardiac arrest in a resident-intern group of any hospital should produce, in time, some salvage from cardiac arrest secondary to coronary thrombosis.

CONCLUSION

1. Se relata el caso de un empleado de hospital que sufrió paro cardiaco debido a infarto del miocardio en el que se llevaron a cabo las manobras llamadas de “resucitación” con sobrevivencia por dos semanas.

2. Algunos casos de paro cardiaco secundario a infarto probablemente pueden rescatarse puesto que la muerte en estos casos se debe más bien a un trastorno del ritmo más que a defallecimiento del miocardio.

3. Si se pone interés en el tratamiento del paro cardiaco en un grupo de internos-residentes de cualquier hospital, con el tiempo se obtendrá el rescate de algunos casos de paro consecutivo a trombosis coronaria.

RESUME

1. Les auteurs présentent un cas d’arrêt cardiaque dû à un infarctus du myocarde chez un employé de l’Hôpital, avec résurrection et survie de deux semaines.
RESUSCITATION FROM CARDIAC ARREST

2. Quelques malades ayant subi un arrêt cardiaque secondaire à un infarctus peuvent être réanimés puisque la mort apparente dans ces cas est souvent liée à une modification du rythme plutôt qu'à une insuffisance myocardique.

3. Un groupe de médecins résidant dans chaque hôpital devrait être spécialisé dans le traitement de l'arrêt cardiaque pour permettre une intervention suffisamment précoce et une réanimation dans les arrêts cardiaques par thrombose coronarienne.

SCHLUSSFOLGERUNGEN


2. Gewisse Fälle von Herzstillstand im Gefolge eines Infarktes können wahrscheinlich ins Leben wieder zurückgerufen werden, weil der Tod in diesen Fällen öfter die Folge einer Rhythmusstörung ist als eines Versagens des Herzmusks.


REFERENCES


