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EXPERIMENT OF CARDIOPULMONARY BYPASS AFTER UNDIPLOMATIC SHOCK TO THE THORACIC CAGE

[1]Mamoona Tahira, [1]Iqra Zafarullah, [2]Zanjbila Kausar
[1]WMO, THQ Kamoke, [2]WMO, BHU Ghakka Mitter Wazirabad

Abstract:
This study was about a female whose age was 38 years. She encountered road accident and was suffering wit aortic rupture. In the treatment room, patient was experimented with cardiopulmonary bypass. Bypass was carried out with a new perspective. This perspective includes affluent introduction of the pulmonary artery and descending aorta. This will help in predicting high danger of agreement to cerebral perfusion from air micro-emboli. The patient recovered quickly.
Keywords: *Pulmonary artery, Micro emboli, Aortic transection, Cardiopulmonary bypass, Air emboli.*

Corresponding author:
Mamoona Tahira,
WMO, THQ Kamoke.

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INTRODUCTION:

Aortic transection is an undiplomatic shock to the thoracic cage. It is not commonly observed. It is very dangerous situation and most of the people are subjected to death. The percentage of individuals who survived are just 15 – 20 % [1]. The method of cardiopulmonary bypass is thoroughly deliberated and advanced to ensure safety of patient. If heparin-less cardiopulmonary bypass is compared with new technique and passive shunting technique and conventional clamp, it is very beneficial as it reduces the chances of related issues and death rate. But there are a few difficulties that are hard to avoid in dangerous methods like an air-emboli [2].

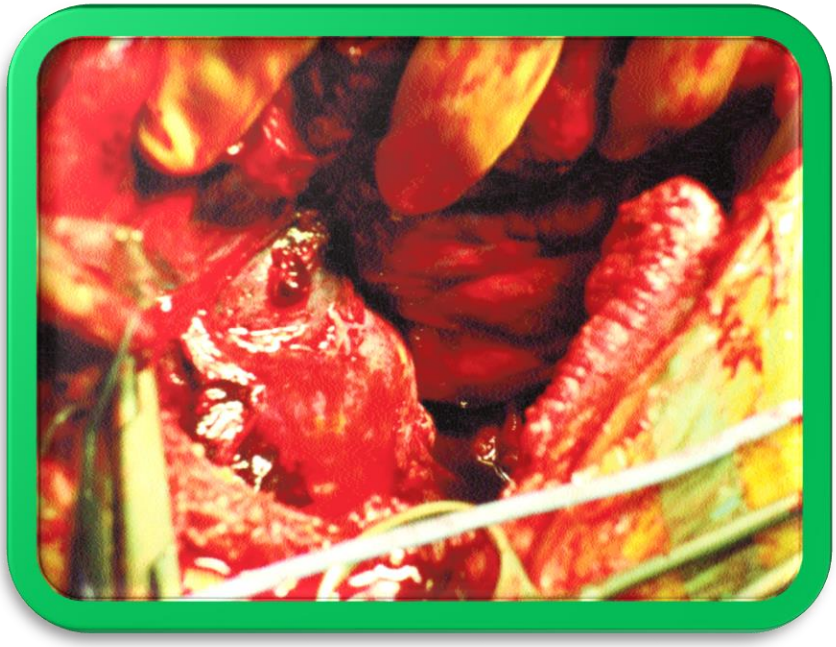
The chances of micro-emboli to break out in the cerebral circulation are present. It is due to the fact that cardiopulmonary bypass is usually attempted through introducing aorta. Grave neurologic significance can be established by associating cardiopulmonary bypass with cerebral micro and macro-emboli containing air. Although, this association is not most common [3]. This report included a case with almost complete aortic transection. Such cases are not usually observed. This case was carried out by cardiopulmonary bypass technique.

CASE REPORT:

In this study, a patient was included who experienced road accident. The age of this female patient was 38 years. Various abrasions such bilateral rib fractures, left haemothorax, fracture of right distal femur and facial contusions were observed in patient as a result of radiological analysis. Although, the patient was normal when first exhibited. Patient was performed with the chest CT-scan. According to CT- scan at the function of descending aorta and aortic arch, aneurysmal swelling was observed.

Patient was shifted to the emergency room at once. By means of a left posterolateral thoracotomy, the descending aorta and aortic arch were exhibited. The aorta was assembled up to the extension of diaphragm. Through introduction of descending aorta and pulmonary artery, patient was settled on cardiopulmonary bypass after opening of pericardium. The pseudo aneurysm was unfolded after distal and proximal management. The bisection of aorta was done more than 90 % (Figure – 01).

Figure No 01: A photo graph of the lesion visualized at the descending aorta



Even then, the patient survived. By using 4 – 0 prolene, the distal and proximal corners of aorta were assembled (Figure – 02).

Figure No 02: The freshened proximal and distal edges of the aortic tear prior to repair

Before the discharge of patient, her femur was associated with internal fixation by orthopaedics. Patient showed swift recovery. No complexities were observed during and after the operation.

DISCUSSION:

In the intersection of aorta, cardiopulmonary bypass has been accepted must efficient method [4]. It offers many benefits. Some benefits include management of hypothermia, minimize time constraints of aortic cross – clamping and minimize the possibility of spiral cord damage and paralysis. The condition of our patient was critical. As a result of cardiac technique, the chances of complexities in patient were high. As compare to ordinary technique, various introductory methods were illustrated. On such technique was introduction of ascending aorta or systemic and pulmonary vessels to the descending aorta [4].

The percentage of chances of disability is 2.3% – 3.2 % as a result of cardiopulmonary bypass. Various studies employ embolic detection and classification (EDAC). In these studies, 1000 micro-emboli per second flowing at rate of 0.2 L/min to 6.0 L/min were observed as a result of cardiopulmonary bypass [5]. In cardiopulmonary bypass, air bubbles are produced into left heart. These bubbles are able to pass along the aorta into the cerebral arteries. 0.003 % to 0.007 % cases of cardiac bypass surgeries are with the incidence of serious air embolism. Different problems include stroke, transient ischaemic attack, seizure and confusion [6, 7]. Through the trigger of pro-inflammatory pathways, oxidative stress is created by cardiopulmonary bypass. Various organs are affected by it [8]

In this study, the technique of cardiopulmonary bypass was employed for outpatient. No complications were noticed in the patient and swift recovery was observed.

CONCLUSION:

The technique employed for this research study was very dangerous. This advanced technique proved very effective in avoiding complexities. Among patients with critical situations, this opened a new way of cardiopulmonary bypass.

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