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A RETROSPECTIVE CASE SERIES TO ASSESS THE OCCURRENCE OF PENETRATING CARDIAC TRAUMATIC CASES (GUNSHOT AND STAB INJURIES)

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Abstract:

All around the world, mostly the young males are influenced by the penetrating cardiac chock. It is a medical emergency. The patients suffering with penetrating cardiac trauma and admitted at Jinnah Hospital, Lahore in the timeframe of October 2017 to June 2018 were mentioned in this research study. These patients were suffering from injuries related to heart. Gunshot wounds followed by stab injuries was the usual procedure of injury. Ten cases were related to this trauma. All of these cases were males with age limit between 17-48 years. 7.23+- 0.855 was the mean revised trauma score. The mortality rate was 20%, out of 10 cases 2 was died. The usual region of wound was the right ventricle followed by left ventricle. In the treatment of these patients, the surgical methods followed was Median Sternotomy. The common finding during the surgery were Haemothorax and Pericardial tamponade. Through involvement of surgery in time, those patients were saved, suffering with penetrating cardiac injury and having observable indication of life.

Keywords: *Cardiac Trauma, Stab Wound, Median Sternotomy.*

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INTRODUCTION:

All around the world, mostly the young males are influenced by penetrating cardiac trauma. It is a medical emergency. Stab injury, shrapnel from explosives and gunshot are the some of the causes of this disorder. The patients who come to hospital in time and are saved are just 6% [1]. There observed improvement in the survival rates with the frequent use of fast identification, treatment and used of fast medical transportation systems of all the death, 7.6% injury death involved the heart according to the study [2]. There exists a variation all over the world in the death rate of patients having penetrating cardia trauma and presented to hospital. The death rate differs from 15% to 59% [3]. The methods of diagnosis in the emergency medical service are advanced. New techniques of diagnosis like cardiac echocardiogram, focused assessment sonography for trauma and Multi-slice CT scan are developed. Through assessing the presentation and management of patients. With penetrating heart trauma, with this study, authors tried to add up a new feature to the available history.

CASE SERIES:

The patients suffering with penetrating cardiac trauma and admitted at Jinnah Hospital, Lahore in the timeframe of October 2017 to June 2018 were mentioned in this research study. The selection is made regardless of the fact that patients experienced surgery or not. The files of the patients were withdrawn using Lcd-9 Code 861.00-13. The information was assessed and entered by using SPSS. Echocardiogram report taken were revised. By means of surgical notes, information was gathered during the operation. The physiological index of the patients was noticed as; 10 patients were conscious with systolic blood pressure less than 80 mmHg, 15 patients were semiconscious with thread pulse, no measurable blood pressure and gasping respiration, 5wee in stable condition and 20 patients were with some indication of life in transit to hospital but unconscious with no vital symptoms, physical activity and respiratory effect [4].

RESULT:

Out of all cases, the cases identified with penetrating cardiac injury were 10. No females were present. The mean age of males was 34.0+-10.6 years. Except two cases, remaining were introduced by others hospitals. In 2 cases, Stab around was prominent type of injury while in 6 cases, the major mode of injury was gunshot wounds followed by Bomb blasts. Three patients were presented with injury in the posterior chest. Whereas, all other patients had injury in the anterior chest. On examination, two patients were found abnormal. One patient were revived with CPR. Among with injury of heart, liver and lungs were commonly affected in five patients. At presentation 10.5+- 2.09 gl/dL was the mean hemoglobin with a mean hematocrit of 31.6+-6.24%. the mean physiologic index and revised trauma score mean was 9.00 +-5.68 and 7.23+- 0.86. initially, in the treatment of patients, the common medication used were tetanus toxoid, ketorolac and iv antibiotic. During treatment, surgery was performed on nine patients. One patient did not agree to the surgical procedure. For all the patients experiencing surgery, the common method employed was median sternotomy. Cardiopulmonary bypass was carried out in one patient. Right ventricle was the common chamber that was injured. In some patients, it was followed by the left ventricle. In one patients, left atrium and right atrium were injured whereas, both left and right ventricle were injured in two patients. Out of 9 patients, haemothorax occurred in 4 patients. In pericardial cavity 200 to 1000 ml was the volume of blood. In nine patients experiencing surgery, five patients had particular effusion, discovered during the operation. Out of 9 patients, no complexities were observed in five patients after the surgery. One patient were affected by the Acinetobacter infection of right lung. He was a victim of bomb blast. As a result, antibiotic was used for management. Haemothorax, liver injury and hemodynamic shock were observed in gunshot wound patients. He developed frequent ventricular fibrillation after the surgery. Chest tube insertion was applied on another patient, who developed pleural effusion after surgery. The second victim of gunshot found with no blood pressure reading and pulse. Immediately, surgery was performed. Along with bleeding, the posterior anterior and inferior side of right ventricle was exhausted fully. Attacks were also observed in patients after the surgery. Through CT scan, hypoxic ischemic brain injury was observed. Finally, it led to the death of patients discharge normal were 8. The time duration of patients stay in the hospital was 12.8+- 9.9 days.

Table: Patient Demographics and Clinical Characteristics.

Mean Age (Mean ± SD)	34.0 ± 10 .6 Age (range)
17-48 **Sex**	
Male	10/10
Mechanism of Injury; n(%)	
Gunshot	6(60%)
Bomb Blast	2 (20%)
Stab Wounds	2 (20%)
Heart Rate (Beats/minute)	115.2 ± 19.2
Respiratory Rate	23.9 ± 10.5 Glasgow Coma Scale
Score	12.3 ± 4.52
Blood Pressure (mm Hg)	
Systolic	125.2 ± 21.4
Diastolic	79.6 ± 18.9 Revised Trauma
Score	
7.23 ± 0.85 Haemoglobin (g/dL)	10.5 ± 2.09
Haematocrit (%)	
31.6 ± 6.24	
Physiologic Index	9.00 ± 5.68
Distribution by group, n(%)	
Group 1 (5)	6 (60%) Group 2 (10)
1 (10%)	
Group 3 (15)	2 (20%)
Group 4 (20)	1 (10%)
Associated Injury, n(%)	
No Injury	5 (50%) Lung
2 (20%)	
Brain, Lung and Liver	1 (10%) Lung And Liver
1 (10%) Liver And Right Femur Fracture	1 (10%)
Hospital Stay (Days)	12.8 ± 9.9
Range (days)	1-34
Mortality, n (%)	2 (20%)

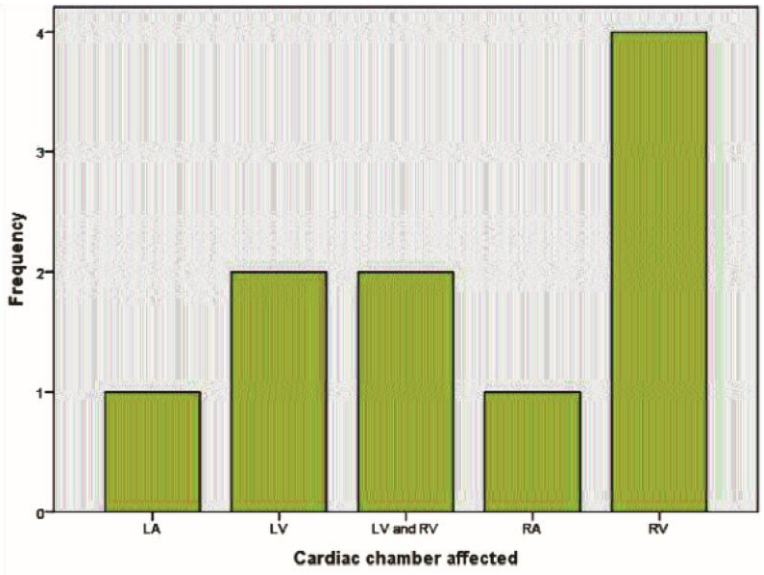

Figure: Cardiac chambers affected. shattered along with profuse bleeding. Post

DISCUSSION:

Similar to the other studies, right ventricle observed by the left ventricle, left atrium and right atrium were the sites commonly influenced in our study similar to the other studies, right ventricle observed by the left ventricle, left atrium and right atrium were the sites commonly influenced in our study [3]. Like other studies young male's patients were include inn our research studies. If the rate of death is compared to the history [5]. It was lower in our study. It was because patients come to the hospital earlier and better prognosis. In our study, death occur to damage of tissue on large scale because of high kinetic energy [6]. The outstanding forecast of patient's death was revised trauma score on initial examination [7]. In our research study, along with the penetrating cardiac trauma, the regions most influenced were abdomen and respiratory system. This result was similar with other studies [8]. Up to a limited extent, it is considered that pericardial tamponade has a protective effect. It saves hemorrhage from the cardiac injury and possibly it saved life of patients [8]. On examination, many patients observed were observed with pericardial tamponade in current study. According to result of one study, if patients is presented with cardiac tamponade, he has more chances of survival [9]. Most of the patients are managed at public sector hospital in the city, suffering with penetrating cardiac wounds [10]. The number of such cases in our center was low because of expensive treatment along with other issues.

CONCLUSION:

The study concluded that mainly young males are include by penetrating cardiac trauma with common mechanism being the gunshots. On reaching the hospital, if the patients are observed with the surviving indications he is saves through involvement of surgery in time. These patients chosen median sternotomy.

DISCLAIMER: Anywhere else, this article is not being taken for publication.

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