



Research Article

EVALUATION OF CARDIAC TAMPONADE CASES

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ABSTRACT

Cardiac tamponade is defined as clinical process which caused by fluid accumulation at pericardium and arising from that there is also decreasing at cardiac output and heart rate. It must diagnosed and be treated fastly because it's a life threatening situation and it may causes sudden and unaccepted deaths.

79 cases investigated retrospectively in the years of 2007-2011 and among the 7500 autopsies which are done in 5 year process at Council of Forensic Medicine, Adana Group Administration. Results are investigated as age distribution, genders, localization of situation which causes cardiac tamponade, blood amount which accumulated at pericardium, old infarction areas and macroscopic and microscopic signs which is accompanying cardiac tamponade.

63 (79,7%) of them were male. 18 (22,8%) of them were between 61-70 ages and at the second rank 13 (16,5%) of them were between the ages of 51-60. The youngest case was 18, the oldest case was 86 years old. Cardiac tamponade were resulted from dissecting aortic aneurysm rupture in 51 cases, myocardium rupture in 26 cases, left ventricle rupture in one case, pulmonary artery rupture in 1 case. Results were investigated in the way of localization of the responsible situation: ascending aorta in 41 cases and the second most common localization was left ventricular posterior wall rupture.

Death cause can't be understood totally without necessary histopathologic and toxicologic investigations in sudden and suspicious deaths. So at these deaths autopsies have to be done.

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INTRODUCTION

Cardiac tamponade is defined as clinical process which caused by fluid accumulation at pericardium and arising from that there is also decreasing at cardiac output and heart rate.¹ It must diagnosed and be treated fastly because it's a life threatening situation and it may causes sudden and unaccepted deaths. It is also important for forensic medicine because of causing sudden unaccepted and suspicious deaths. In its etiology, there are so many reasons which are malignancy, collagen tissue disorders, chest traumas, hypothyroidism, uremia and additionally myocardium and dissecting aortic ruptures.² Myocardium and aortic ruptures cases are very severe and they are important from the point of forensic medicine. Because of the very fast nature of this situations, compensation mechanisms are insufficient and that causes sudden deaths. 150 cc or more bleeding to pericardium causes sudden decreasing of arterial pressure and losing patients in shock status.

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MATERIALS-METHODS

79 cases investigated retrospectively in the years of 2007-2011 and among the 7500 autopsies which are done in 5 year process at Council of Forensic Medicine, Adana Group Administration. Results are investigated as age distribution, genders, localization of situation which causes cardiac tamponade, blood amount which accumulated at pericardium, old infarction areas and macroscopic and microscopic signs which is accompanying cardiac tamponade. This results discussed with literature.

RESULTS

Totally 79 cardiac tamponade cases which were autopsied in 5 year process between the years of 2007-2011, 16 (20,3%) of them were female, 63 (79,7%) of them were male. 18 (22,8%) of them were between 61-70 ages and at the second rank 13 (16,5%) of them were between the ages of 51-60. The youngest case was 18, the oldest case was 86 years old. (Table 1) Cardiac tamponade were resulted from dissecting aortic aneurysm rupture in 51 cases, myocardium rupture in 26 cases, left ventricle rupture in one case, pulmonary artery rupture in 1 case.

Results were investigated in the way of localization of the responsible situation: ascending aorta in 41 cases and the second most common localization was left ventricular posterior wall rupture (Figure 1). When the blood amount investigated in pericardium, at least 150 cc, mostly 700 cc blood accumulated, in 41 cases pericardium was filled, in 13 cases there was blood amount of between 201-300cc, in 11 cases there was blood amount between 401-500 cc.

It was detected that the lowest heart weight was 330g, the highest heart weight was 950g, average heart weight was 484g.

11 cases of 51 dissected aortic aneurysm cases, 15 cases of 26 myocardium rupture cases, there were pearlescent scar tissues (old infarction areas).

All cases in our study were investigated in toxicologic ways but histopathologic investigation requested only in 10 (12,7%) cases. When the macroscopic and histopathologic signs at organs were evaluated, in 21 cases lungs were edematous, in 24 cases coronary arteries were obstructed severely, in 10 cases coronary arteries were obstructed moderately, in 1 case coronary arteries was obstructed lightly.

36 cases were dead on arrival, 35 cases founded death, 8 cases died during the treatment at hospital. 3 cases were detected as pregnant. 7 cases had complaints like abdomen pain, shortness of breath etc. And applied to hospitals but they were sent homes with prescription lately they died.

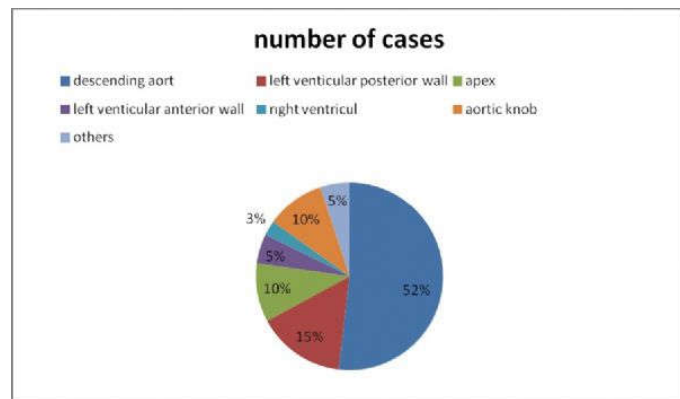


Figure 1 Localization of the situation that caused heart tamponade

Table 1 Age and sex distribution of cardiac tamponade cases by years

	MALE		FEMALE		AGE										TOTAL	
	CASE	%	CASE	%	11-20	21-30	31-40	41-50	51-60	61-70	71-80	81-90	CASE	%		
2007	3	3,8	11	13	0	2	4	1	4	2	1	0	14	17,7		
2008	5	6,4	18	22,7	0	3	2	6	3	8	1	0	23	29,2		
2009	2	2,5	14	17,7	0	1	4	1	4	4	1	1	16	20,2		
2010	2	2,5	10	12,7	1	1	1	2	0	1	3	3	12	15,2		
2011	4	5,1	10	12,7	1	2	1	1	2	3	2	2	14	17,7		
TOTAL	16	20,3	63	79,7	2	9	12	11	13	18	8	6	79	100		

DISCUSSION

Cardiovascular diseases at the first rank in the neutral deaths which detected at judiciary autopsies. Most of these cases were at middle and advanced ages.³ Most of the cases in our study were between the ages of 51-70 compatible to that general rule. Coronary artery diseases and myocardium infarctus were seen commonly but aort dissection rupture and spontaneous heart rupture deaths are seen in less amounts among the cardiovascular diseases.^{3,4} 41 of 79 cases in our study were ascending aorta localized dissecting aortic aneurysm which

caused cardiac tamponade, that results are compatible with literature. 24 cases have severely obstructed, 10 cases have moderately obstructed coronary arteries. Cardiac tamponade cases which caused by myocardium and aortic ruptere are very severe and they are fast in nature because of that compansation mechanisms are insufficient. Accumulation of 150 cc or more amount of blood at pericardium may result sudden decreasing in arterial pressure and may cause death of patients in shock status. In our study, 41 (51,9%) cases found out that their pericardium were full of blood.

Yagmur and friends' research at 2009 showed that 3 sudden death cases caused by dissecting aortic aneurysm were at ages 39,49,62 and their gender were male. Both of 3 cases haven't diseases in their history. One of the cases applied to doctor with sudden back pain the other case applied with epigastric pain. They are sent to home with the prescription of anelgesics and muscle relexants. Cases found at home as death lately and autopies were done at that time and proved that cases were death due to dissecting aortic aneurysm ruptere.⁵ Similarly to that research in our study 7 cases applied to doctors with the complaints of abdominal pain, shortness of breath, back pain, etc. They are diagnosed as myalgia and prescribed with anelgesics and antibiotics and sent to home. Lately patient died at home and dead on arrival at hospital. It must be recalled that patients with complaints of sudden back pain and chest pain may have dissection. Necessary examination and investigations have to planned at dissecting aoric aneurysm suspicious patients.⁶

Deaths caused by cardiac tamponade are very important in the point of forensic medicine because they occurs very fast and they cause suspicious situations. In our study most common age prevelances were 61-70 and 51-60, but it can be seen at younger ages.

A study showed that in 69 natural cardiac tamponade death cases, males were predominant with 48 cases, there were 17 cases between the ages of 41-50 and 25 cases of natural cardiac tamponade cases were caused by myocardium rupture and 44 of them were caused by aortic rupture.⁷ In our study, there were 16 female cases and 63 male cases, 51 of the 79 cases had died because of the dissecting aortic aneurysm rupture, 26 of them died because of the cardiac tamponade which arised from myocardium rupture. It is detected that these results are compatible with the research of Büyük and his friends.

At another study, 5 of the 10 spontaneous heart rupture cases have showed pearlescent scar tissues in myocardium cross sections.⁴ In our study, 15 of the 26 myocardium rupture cases showed pearlescent scar tissues (old infarction areas).

Histopathologic investigation was requested from only in 10 cases (12,7%) but diagnosis were done with macroscopic datas and histopathology weren't minded.

CONCLUSION

Death cause can't be understood totally without necessary histopathologic and toxicologic investigations in sudden and suspicious deaths. So at these deaths autopsies have to be done.

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