

Online Supplement

Case #	Time Event to Death (d)	Age (y)	Sex	Race	Ht (m)	Wt (kg)	BMI (kg/m ²)	Heart Wt (g)	CAD	Myocardial Thickness (mm)			Cardiac Findings	Medical Examiners Notes and Reported Cause of Death	Notes
										RV	LV	Septum			
1	0	33	M	W	1.93	142.5	38.2	530	Yes	5			80% stenosis mid-LAD; no myocardial focal lesions. LV chamber diameter 5 cm.	Drowning, cardiomegaly with LVH.	Approximately 45 kg weight loss during training
2	0	43	F	W	1.65	84.8	31.1	470	No		17		LVH. Normal coronary anatomy. Up to 10% focal eccentric luminal narrowing of RCA. Focal microfiber disarray and fibrosis in RV.	Drowning, hypertensive heart disease	She was observed swimming slowly near the park and stopped to hold on to a buoy. She then started doing the backstroke. Another swimmer heard her wheezing.
3	3	38	F	W	1.80	51.7	15.9	311	No	3	10	9	No CAD. Contraction band necrosis and individual myocytolysis with associated inflammation. Acute myocarditis. Thickening and lobulation of mitral valve.	Anoxic brain injury due to near drowning.	
4	0	66	M	W										Acute dissection of descending aorta	
5	0	42	M	W	1.79	82.1	25.6	440	No				No CAD. No fibrosis.	Asphyxiation due to drowning. AF listed as a possible contributing factor; cardiomegaly. Urine positive for flecainide	
6	0	57	M	W	1.83	78.5	23.5	430	No		10		Dilation of both ventricles. Focal atherosclerotic stenosis of LAD (up to 50-60%)	Drowning in setting of presumed cardiac event. Dilated cardiomyopathy of unknown etiology.	
7	0	40	F	W	1.68	77.6	27.6	310	No	2	11	8	25% stenosis of LAD. Myxomatous degeneration of zona fibrosa (mitral valve prolapse).	Cardiac arrhythmia due to myxomatous degeneration of mitral valve (mitral valve prolapse)	
8	0	64	M	W	1.80	105.3	32.4	430	No	3	12		Up to 10% stenosis of LAD.	Atherosclerotic CV disease.	
9	0	58	M	W	1.78	90.7	28.7	470	No	8	26	26	Small atheroma of LAD, otherwise no CAD.	Massive retroperitoneal hemorrhage due to renal artery dissection/rupture	

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10	0	46	M	W	1.80	104.4	32.1	520	No	4	17	20	Two areas of fibrosis of postero-lateral LV wall, chronic inflammation and extracellular pigment and pigmented macrophages (siderophages) indicative of remote infarction and hemorrhage.	Hypertensive cardiovascular disease, complicated by drowning. History of hypertension.	Found by another swimmer bobbing in water. He stated: <i>"It seemed able to vocalize but not verbalize - it seemed as though he was breathing and able to grunt, but he was unable to actually form words."</i>
11	1	46	M	W	1.73	77.6	26.0	450	No		12	22	No CAD	Asphyxia by submersion. Mild cardiomegaly.	
12	0	43	M	W	1.73	69.7	23.4	290	No	3	13	13	RV chamber diameter 5.5 cm, LV 4.4 cm, transventricular 4.3 cm. RV: scattered subtotal intramural adipose without necrosis, degeneration, fibrosis or inflammation. Adjacent ventricular septum with focal loose interstitial fibrous tissue.	Drowning.	
13	0	42	M	W				410	Yes	2.5-4	10-12		LV mildly dilated, diameter 4.2 cm at level of papillary muscles. Coronary anatomy normal. 60-70% soft, tan plaque to the proximal portion of LAD (approx. 1 cm distal to origin of L circumflex), with small amount of plaque hemorrhage present, and a soft, red thrombosis to its surface. Thrombosis not adherent to the surface of the plaque. Some minor calcific atherosclerosis to the proximal L circumflex and L main, with an area of tan atherosclerosis to the proximal LAD (proximal to the 60-70% stenosis), <50% in degree. Myocardium has a few small areas of focal white fibrosis to the LV, notably posterior LV and posterior septum. No areas of pallor, softening or hemorrhage.	Sudden cardiac death due to CAD.	

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14	2	44	M	W	1.80	85.8	26.4	400	No				RCA: <20% stenosis. Occasional hypertrophic myocytes.	Death attributed to hypoxic encephalopathy with cerebral oedema. Post event evidence of prolonged Q-Tc. Said to be in VF when found. Died 2 days after event.	
15	0	45	M	B	1.73	74.4	24.9	400	No				No CAD	Drowning	
16	0	51	M	W	1.83	127.9	38.3	630	No	6	25		No CAD	Drowning	History of hypertension.
17	0	46	M	W	1.80	99.8	30.7	540	Yes	3	30	20	LAD: up to 70% luminal stenosis 2.5 cm from origin. RCA, L main and L circumflex normal. Mild thickening of mitral and tricuspid valves.	Lethal cardiac arrhythmia, complications of atherosclerotic CV disease with water immersion.	Previously healthy, several prior triathlons. He was stated to be at least 1/2 mile into the swim when he was found.
18	0	48	M	W	1.83	112.5	33.6	540	No	4	10	10	Heart markedly dilated; 20% segmental narrowing of proximal LAD. Histology of myocardium unremarkable. Elsewhere in report, stated maximal 50-60% segmental narrowing, not thought to contribute to death due to lack of critical stenosis and lack of ischemic changes in myocardium	Idiopathic dilated cardiomyopathy.	Collapsed on the beach after exiting the water at the end of the swim portion.
19	0	53	M	W	1.77	77.1	24.8	428	No	4	15	13	No CAD	Freshwater drowning	
20	0	57	M	W	1.83	101.6	30.4	450	Yes				LAD 70% RCA 70% proximal, 50% distal, circumflex-slight atherosclerosis. One slide had hemorrhage within a plaque, judged to be several days old due to macrophages, early granulation tissue and a few neutrophils	Atherosclerotic CV disease with narrowing of coronary arteries	
21	0	64	M	W	1.70	81.2	28.0	440	No				RCA-10% stenosis LAD-20% stenosis L circumflex 10% stenosis	Drowning, hypertensive CV disease	
22	0	68	M	W					Yes					No autopsy, history of cardiac stents. Presumed cause of death CAD	

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23	0	44	F	B	1.63	199.6	75.5	510	No				Minimal atherosclerosis		Noted to be struggling near end of swim. Brother died of CHF.

Abbreviations: **W** (white); **B** (black); **Ht** (height); **Wt** (Weight); **BMI** (body mass index); **RV** (right ventricle); **LV** (left ventricle); **CAD** (coronary artery disease); **CHF** (congestive heart failure); **LAD** (left anterior descending coronary artery); **RCA** (right coronary artery); **CV** (cardiovascular); **ACLS** (advanced cardiac life support); **VF** (ventricular fibrillation)