Death Certificate

Cases

Special Thanks to:

Sarah Mahasin

Forensic Team

Case #1:

A young adult female of low socio-economic status, and a laborer by profession, was brought dead to the Government Medical College & hospital. History provided by her husband revealed that she had abdominal pain for the last five days for which she was getting treatment from a private practitioner. She had been prescribed NSAIDs and antispasmodics to relive the pain. However, she was not investigated and no attempt was made by the practitioner to reach any diagnosis. The autopsy was conducted on the next day and at autopsy, about two-and-a-half liters of blood was present in the abdomen and pelvic cavity. Careful internal examination revealed a ruptured ectopic pregnancy as the source of bleeding.

Answer:

Part 1: Intra-abdominal hemorrhage caused by ruptured ectopic pregnancy high altitude ascension, sleep apnea, inappropriate ventilation, or a heart mechanism failure

Case #2:

48 year-old male developed a cramping, epigastric pain, which radiated to his back, followed by nausea and vomiting Shortly after dinner on the day prior to admission to the hospital. The pain was not relieved by positional changes or antacids. The pain persisted, and 24 hours after its onset, the patient sought medical attention. He had a 10-year history of excessive alcohol consumption and a 2-year history of frequent episodes of similar epigastric pain. The patient denied diarrhea, constipation, hematemesis, or melena. The patient was admitted to the hospital with a diagnosis of an acute exacerbation of chronic pancreatitis. Radiological findings included a duodenal ileus and pancreatic calcification. Serum amylase was 4,032 units per liter. The day after admission, the patient seemed to improve. However, that evening he became disoriented, restless, and hypotensive. Despite intravenous fluids and vasopressors, the patient remained hypotensive and died. Autopsy findings revealed many areas of fibrosis in the pancreas with the remaining areas showing multiple foci of acute inflammation and necrosis

Answer:

Part 1: acute exacerbation of chronic pancreatitis (one cause is enough)

Chronic alcoholism

CAUSE OF DEATH (See instructions and examples)

32. **PART I.** Enter the chain of events--diseases, injuries, or complications--that directly caused the death. DO NOT enter terminal events such as cardiac arrest, respiratory arrest, or ventricular fibrillation without showing the etiology. DO NOT ABBREVIATE. Enter only one cause on a line. Add additional lines if necessary.

Approximate Interval: Onset to death

IMMEDIATE CAUSE (Final disease or condition ---------> resulting in death)	a. Acute exacerbation of chronic pancreatis Due to (or as a consequence of):	3 days
Sequentially list conditions, if any, leading to the cause listed on line a. Enter the **UNDERLYING CAUSE** (disease or injury that initiated the events resulting in death) **LAST**	b. Chronic pancreatitis Due to (or as a consequence of):	2 years
	c. Chronic alcoholism Due to (or as a consequence of):	10 years
	d.	

PART II. Enter other significant conditions contributing to death but not resulting in the underlying cause given in PART I.

33. WAS AN AUTOPSY PERFORMED? ■ Yes □ No

34. WERE AUTOPSY FINDINGS AVAILABLE TO COMPLETE THE CAUSE OF DEATH? ■ Yes □ No

35. DID TOBACCO USE CONTRIBUTE TO DEATH? □ Yes □ Probably ■ No □ Unknown

36. IF FEMALE:
□ Not pregnant within past year
□ Pregnant at time of death
□ Not pregnant, but pregnant within 42 days of death
□ Not pregnant, but pregnant 43 days to 1 year before death
□ Unknown if pregnant within the past year

37. MANNER OF DEATH
■ Natural □ Homicide
□ Accident □ Pending Investigation
□ Suicide □ Could not be determined

Notes on death certification:

Duodenal ileus and pancreatic calcification are nonspecific processes and neither could be listed as an underlying cause of death.

Case #3:

A 68-year-old male was admitted to the hospital with progressive right lower quadrant pain of several weeks' duration. The patient had lost approximately 40 pounds, with progressive weakness and malaise. On physical examination, the patient had an enlarged liver span that was four finger breadths below the right costal margin. Rectal examination was normal and stool was negative for occult blood. Routine laboratory studies were within normal limits. A chest x ray and barium enema were negative .

His EKG showed a right bundle branch block. CT scan showed numerous masses within both lobes of the liver. A needle biopsy of the liver was diagnostic of moderately differentiated hepatocellular carcinoma, and the patient was started on chemotherapy. Three months after the diagnosis ،the patient developed sharp diminution of liver function as well as a deep venous thrombosis of his left thigh, and he was admitted to the hospital .On his third day, the patient developed a pulmonary embolism and died 30 Minutes late

Answer:

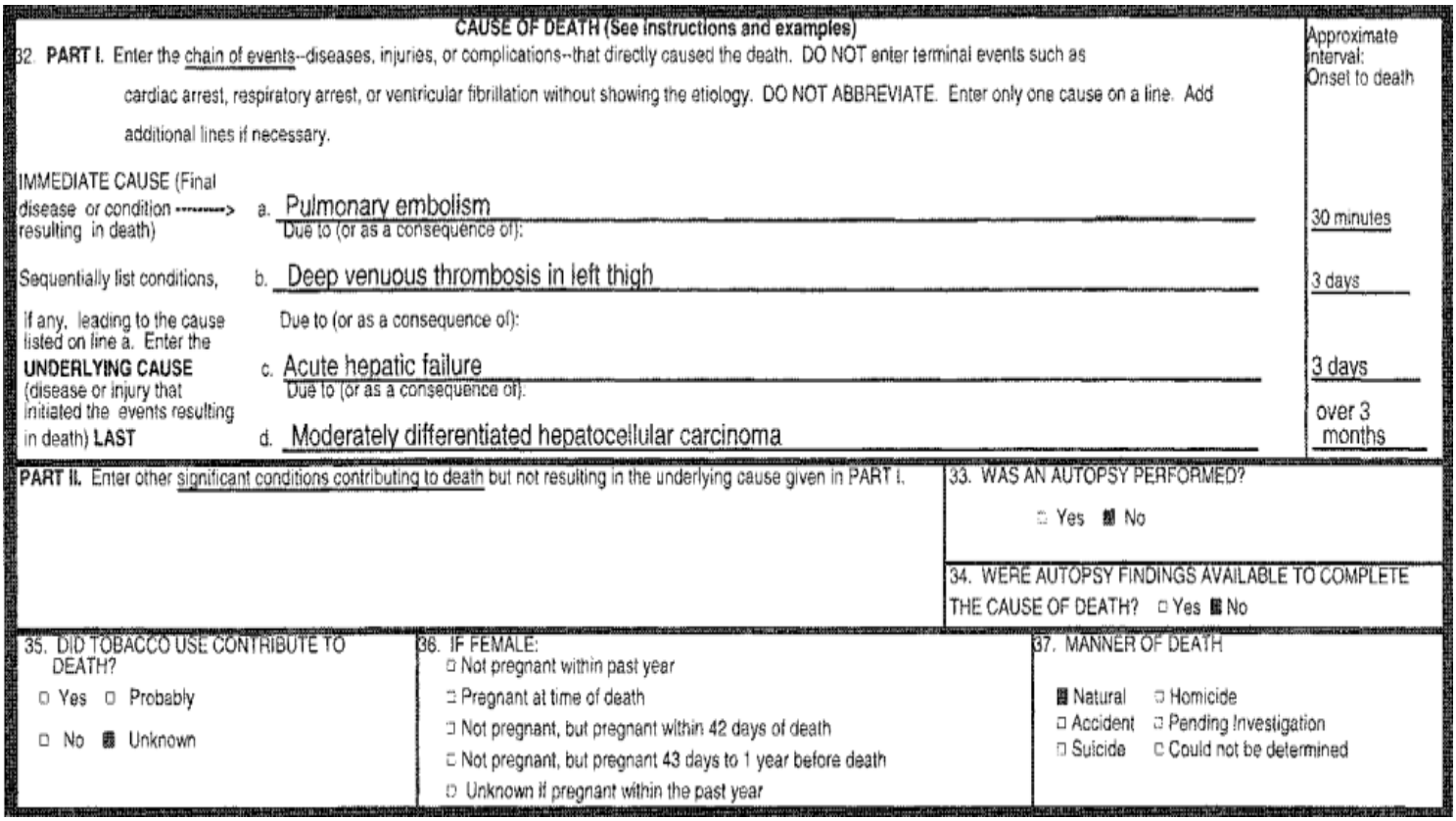
Part 1: Pulmonary embolism

DVT

Acute liver failure (optional)

Chemotherapy (optional)

Hepatocellular carcinoma



CAUSE OF DEATH (See instructions and examples)

32 PART I. Enter the chain of events--diseases, injuries, or complications--that directly caused the death. DO NOT enter terminal events such as cardiac arrest, respiratory arrest, or ventricular fibrillation without showing the etiology. DO NOT ABBREVIATE. Enter only one cause on a line. Add additional lines if necessary.

Approximate Interval: Onset to death

IMMEDIATE CAUSE (Final disease or condition ---------> resulting in death)
a. Pulmonary embolism — 30 minutes

Due to (or as a consequence of):

Sequentially list conditions, If any, leading to the cause listed on line a. Enter the UNDERLYING CAUSE (disease or injury that initiated the events resulting in death) LAST

b. Deep venuous thrombosis in left thigh — 3 days

Due to (or as a consequence of):

c. Acute hepatic failure — 3 days

Due to (or as a consequence of):

d. Moderately differentiated hepatocellular carcinoma — over 3 months

PART II. Enter other significant conditions contributing to death but not resulting in the underlying cause given in PART I.

33. WAS AN AUTOPSY PERFORMED? ☐ Yes ■ No

34. WERE AUTOPSY FINDINGS AVAILABLE TO COMPLETE THE CAUSE OF DEATH? ☐ Yes ■ No

35. DID TOBACCO USE CONTRIBUTE TO DEATH?
☐ Yes ☐ Probably
☐ No ■ Unknown

36. IF FEMALE:
☐ Not pregnant within past year
☐ Pregnant at time of death
☐ Not pregnant, but pregnant within 42 days of death
☐ Not pregnant, but pregnant 43 days to 1 year before death
☐ Unknown if pregnant within the past year

37. MANNER OF DEATH
■ Natural ☐ Homicide
☐ Accident ☐ Pending Investigation
☐ Suicide ☐ Could not be determined

Case #4:

A 45-year-old AAM was taken to the ED with anaphylactic shock. He was working on his house when he was attacked by bees. He was stung twice and subsequently experienced generalized body hives and decrease in SBP to the 80s per EMS. The patient denied SOB, N/V or tongue swelling on admission. There was no prior exposure or allergic reaction. Benadryl 25 mg IV and bolus IV fluids were given by EMS.

Past medical history (PMH)

Alcohol abuse, hypertension (HTN), smoking.

Medications
None.
Physical examination
Drowsy and not responsive
VS: BP 100/50, HR 101, RR 18, SpO2 93% on RA.
HEENT: bilateral swollen upper eyelids, no tongue swelling, posterior oral pharynx visualized.
Chest: CT, no respiratory distress, no crackles or wheezing.
CVS: no murmurs, rubs or gallops, regular rate and rhythm.
Abdomen: Soft, NT, ND, + BS.
Extremities: no c/c/e.
Skin: generalized urticarial rash.
What happened next?

The patient started to complain of sore throat. ENT consult was called who attempted to visualize the larynx with a fiberoptic scope but the patient was unable to cooperate due to exaggerated gag reflex.

His voice became hoarse, oxygen saturation decreased severely and he was re-examined by the ED physician who was not able to visualize the posterior pharynx. The patient passed away before intubation due to the severe rapidly developing supraglottic swelling and bronchospasm resulting in asphyxia.

Final diagnosis:
Anaphylactic shock due to allergic reaction to bee sting.

Answer:

Part 1: Upper respiratory shock (optional)

Anaphylactic shock (main cause)

Case #5:

Saad Mohammad a 66 year- old business man came to the emergency room complaining of extreme abdominal pain ,vomiting blood (hematemesis), confused, and pale yellowish color of the skin .

Vital signs : Pulse rate: 130/min Blood pressure :160/70

Temperature: 38 Co Respiratory rate : 24

By abdominal examination he showed signs of Edema, ascites, jaundice, hepatomegaly and splenomegaly.

Liver function test showed:

Albumin: decreased

Total bilirubin: increased

Conjugated bililrubin: decreased

Unconjugated bilirubin: increased

Ultrasound showed:

small and nodular , thick wall of the gallbladder, portal hypertension (Doppler)

Saad is a heavy alcohol drinker, he drinks 5-6 units per day, and he smokes 30 cigarette a day for the last 15 years.

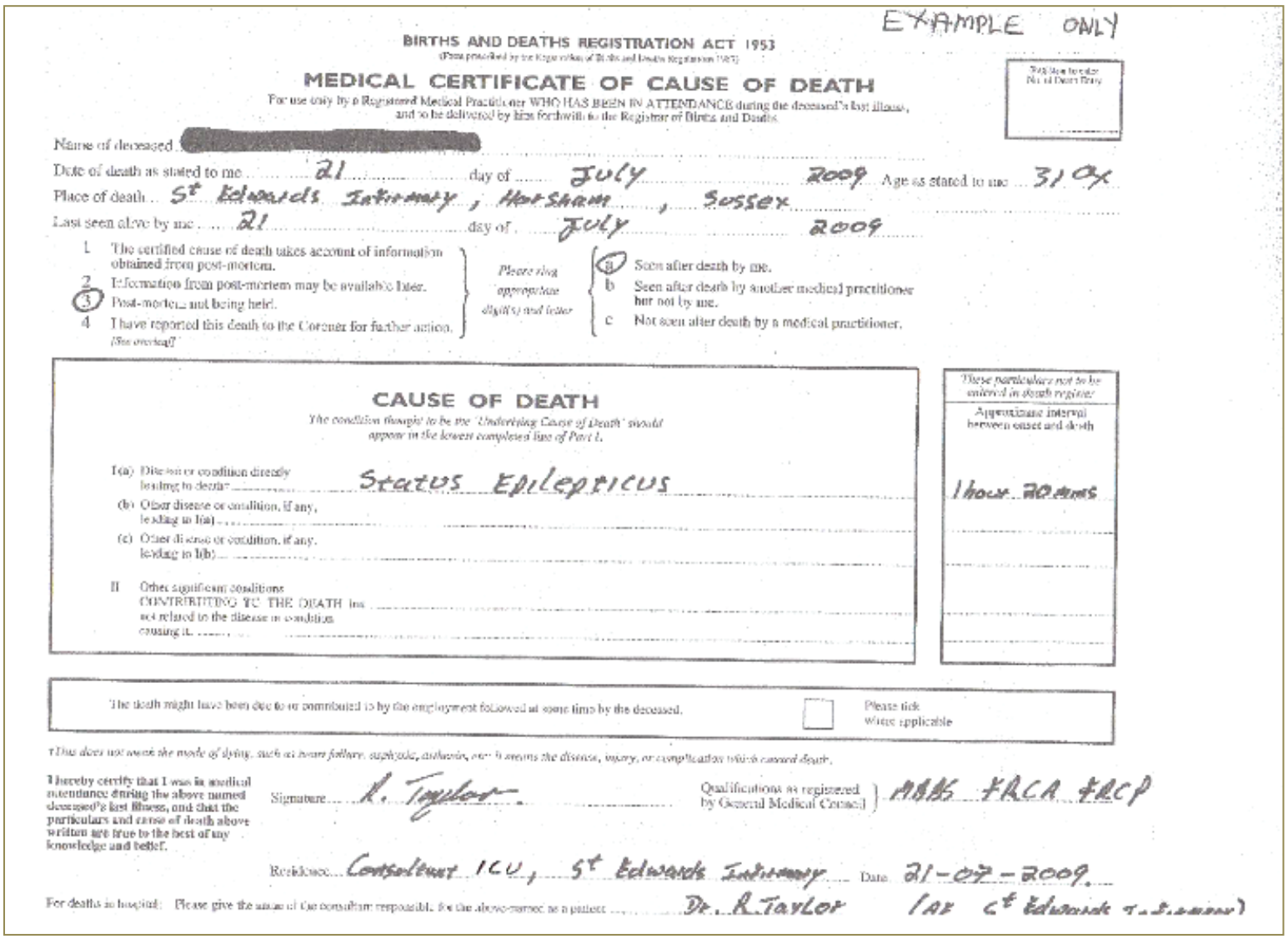
After a few minutes saad vomited a lot of blood, he fell and died.

Answer:

Ruptured Esophageal varicies
Due to
-Liver cirrhosis
Due to
-chronic alcohol abuse

Case # 6:

Its one day after this 31-year –old female died in the ICU of the local hospital. She was admitted and died following a fit at home. She had a long history of poorly controlled epilepsy.
The bereavement team was unsure whether the case needs referral to the coroner or if an MCCD (Medical Certificate of Cause of Death) can be issued. You are passed the emergency



EXAMPLE ONLY

BIRTHS AND DEATHS REGISTRATION ACT 1953

MEDICAL CERTIFICATE OF CAUSE OF DEATH

For use only by a Registered Medical Practitioner WHO HAS BEEN IN ATTENDANCE during the deceased's last illness, and to be delivered by him forthwith to the Registrar of Births and Deaths.

Name of deceased [redacted]

Date of death as stated to me 21 day of July 2009 Age as stated to me 31 yrs

Place of death St Edwards Infirmary, Horsham, Sussex

Last seen alive by me 21 day of July 2009

1 The certified cause of death takes account of information obtained from post-mortem.
2 Information from post-mortem may be available later.
(3) Post-mortem not being held.
4 I have reported this death to the Coroner for further action.
(See overleaf)

Please ring appropriate digit(s) and letter

(a) Seen after death by me.
b Seen after death by another medical practitioner but not by me.
c Not seen after death by a medical practitioner.

CAUSE OF DEATH

The condition thought to be the 'Underlying Cause of Death' should appear in the lowest completed line of Part I.

These particulars not to be entered in death register

Approximate interval between onset and death

I(a) Disease or condition directly leading to death* Status Epilepticus — 1 hour 20 mins
(b) Other disease or condition, if any, leading to I(a)
(c) Other disease or condition, if any, leading to I(b)

II Other significant conditions CONTRIBUTING TO THE DEATH but not related to the disease or condition causing it

The death might have been due to or contributed to by the employment followed at some time by the deceased. ☐ Please tick where applicable

*This does not mean the mode of dying, such as heart failure, asphyxia, asthenia, etc., it means the disease, injury, or complication which caused death.

I hereby certify that I was in medical attendance during the above named deceased's last illness, and that the particulars and cause of death above written are true to the best of my knowledge and belief.

Signature R. Taylor Qualifications as registered by General Medical Council MBBS FRCA FRCP

Residence Consultant ICU, St Edwards Infirmary Date 21-07-2009

For deaths in hospital: Please give the name of the consultant responsible for the above-named as a patient Dr. R Taylor ICU St Edwards Infirmary

Results:
Upon request of medical records to review full hospital medical notes of the deceased, They confirmed that she only developed epilepsy at the age of 17, after she was severely injured in a car crash involving another car which was driven by a 'drunk driver'. They confirm her treatment regime and that her epilepsy was poorly controlled. They hold no other information of interest.

The deceased's neurologist confirms the same. He also confirms that she had grand mal epilepsy which, despite close medical supervision, was exteremely difficult to control. He confirms the treatment was on, that she was complaint with her medication and that he was sure she never drunk alcohol or took drugs as she was desperate to get her epilepsy under control.

Review of the blood results of the deceased had showed Blood Gases and FBCs all in normal range. No other results are available just yet.

Test	Results	Reference range
Hb	14.1	13.5-18.0
WBC	7.2	4.0-11.0
Neutrophils	4.1	2.0-7.5
Platelets	372	150-400
Na	141	135-145
K	4.1	3.5-5.0
Urea	3.4	2.5-6.7
Creatinine	82	70-150
ALT	21	5-35
ALP	78	30-300
Bilirubin	11	3-17
Albumin	41	35-50

Test	Result	Normal
pH	7.35	7.34-7.45
pCO2	5.5kPa	4.67-6.00
pO2	11.26kPa	10.00-13.33
HCO3	18.2 mmol/L	
BE (Base excess)	-1.5	-2.00-2.00

Blood results B: 22.7.09

Test	Results	Reference range
Hb	14.4	13.5-18.0
WBC	6.8	4.0-11.0
Neutrophils	4.0	2.0-7.5
Platelets	210	150-400
Na	142	135-145
K	4.2	3.5-5.0
Urea	6.1	2.5-6.7
Creatinine	86	70-150
ALT	22	5-35
ALP	78	30-300
Bilirubin	11	3-17
Albumin	41	35-50

Test	Result	Normal
pH	7.41	7.34-7.45
pCO2	5.0kPa	4.67-6.00
pO2	10.41kPa	10.00-13.33
HCO3	18.4 mmol/L	
BE (Base excess)	-1.6	-2.00-2.00

Blood results C: 23.7.09

Test	Results	Reference range
Hb	13.6	13.5-18.0
WBC	6.7	4.0-11.0
Neutrophils	3.5	2.0-7.5
Platelets	340	150-400
Na	137	135-145
K	3.7	3.5-5.0
Urea	2.7	2.5-6.7
Creatinine	75	70-150
ALT	20	5-35
ALP	75	30-300
Bilirubin	10	3-17
Albumin	35	35-50

Test	Result	Normal
pH	7.44	7.34-7.45
pCO2	6.0kPa	4.67-6.00
pO2	10.11kPa	10.00-13.33
HCO3	18.5 mmol/L	
BE (Base excess)	-1.7	-2.00-2.00

Answer:

Part 1: Status epilepticus

Head Injury

Automobile accident

Case #7:

A 56-year-old man known to have hypertension, DM2, hyperlipidemia. diagnosed of congestive heart failure 3 years ago came to ER c/o dyspnea and fatigue and lower limb edema. On physical examination he is a febrile. The pulse is weak and fast(tachycardia),with a BP 95/60 (hypotensive) and gasping for air. On auscultation heart sounds reveal an added sound. The lung bases have reduced breath sounds, emergent coronary angiography shows a thrombotic occlusion of the left circumflex artery and areas of 50% to 70% narrowing in the proximal circumflex and the anterior descending arteries. He is not taking his heart medications properly. In the ER he was under ECG monitoring and intubated. He received IV fluid, diuretics, ACEI and beta-blockers. Unfortunately within one hour he developed ventricular fibrillation.

they tried to defibrillate him but ECG line went flat. The patient didn't respond to the **Emergency treatment** including cardiopulmonary resuscitation (CPR) and defibrillation. He was announced dead 20 minutes later after proper death confirmation.

You are the treating physician at the ER. You are asked to inform the family and write a death certificate..

Answer:

Part 1: Acute MI

Thrombotic occlusion (specify artery) or acute occlusive thrombotic artery disease

Part 2: Hyperlipedimia, HTN, DM, Congestive heart failure

Congestive heart failure is mentioned in part 1 if the occlusion was incomplete so the heart is too weak to pump blood

Case #8:

15-year-old female had been suffering from insulin-dependent diabetes mellitus for the prior 8 years and had a fever and vomiting for the past few days. On the 4th day, after the onset of fever and vomiting, she died suddenly, and was autopsied to clarify the cause of death. Macroscopic examination revealed that the pancreas was atrophic (40 g) whereas the liver was markedly enlarged (2,740 g). Histological findings were: 1) The islets of Langerhans were decreased in size and number. They were not positive for aldehyde-fuchsin staining, 2) There were severe fatty changes in the liver cells. The retained blood in the left ventricle was analyzed: glucose, 1,016 mg/dl; acetone, 345 mg/l; acetoacetate, 5.91 mmol/l: D-3-hydroxybutyrate, 4.17 mmol/l; hemoglobin A1c, 10.2%; fructosamine, 416 mumol/l; total serum cholesterol, 220 mg/dl; triglycerides, 205 mg/dl; free fatty acid, 8.0 mEq/l; urea nitrogen, 40 mg/dl. Although the biochemical estimation of the glucose and ketone levels in post-mortem

body fluids was recognized as being unreliable, many of these values were far elevated in comparison with those of normal individuals. Thus, we concluded that the cause of death was diabetic ketoacidosis. We also discuss the diagnostic problems of postmortem blood chemistry.

Answer:

Part 1: Diabetic ketoacidosis

Type 1 Diabetes

Case #9:

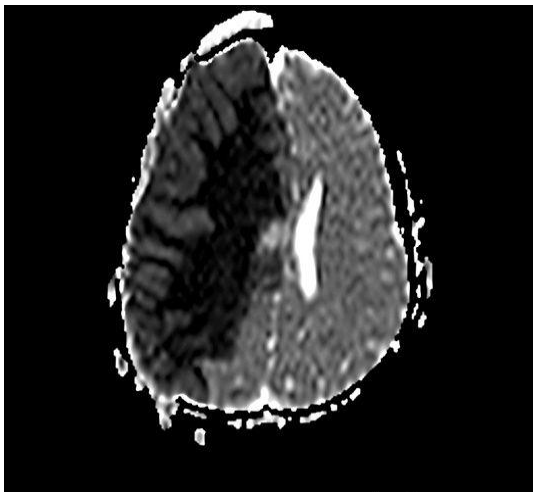
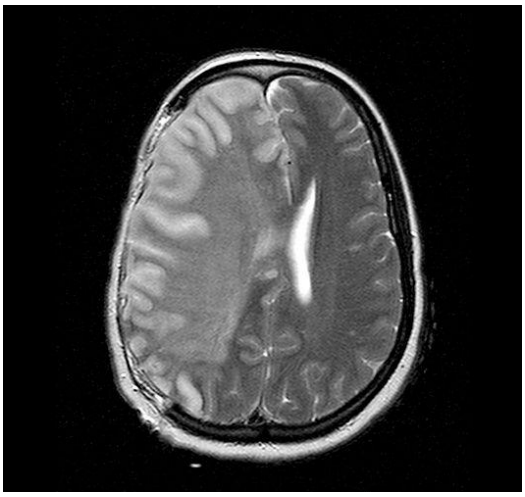
A 75-year-old female (CF) was directly admitted to the hospital after she slipped and fell at home. The patient had a right pelvic bone fracture (follow the bone contour and you will see the break in the smooth line -- this is the fracture). The fracture was fixed internally by an orthopedic surgeon. The patient had stable vital signs postoperatively;

Vitals after surgery:
Temperature: 37.2 oC
RR: 20
BP: 135 /85
Pulse: 90 bpm
Motor power was 5/5 bilaterally,

Several days postoperatively, she developed suddenly severe headache, slurred speech followed by loss of consciousness and death. Post-mortem examination revealed massive thromboembolism in the internal carotid artery.

Past medical history (PMH)
She is known to have dyslipidemia and previous TIA. Remote history of (h/o) uterine and colon cancer.



Answer:

Part 1:

a) stroke

b) thromboembolidm in ICA

c) atherosclerosis

Part 2:

dyslipidemia,
TIA, Hx of out hip repair surgery

Case #10:

On Monday, July 25th, 2011, Sara Abdullah AL Obeid, a 37-year-old married female was rushed by her husband to King Faisal Specialist Hospital & Research Centre presenting with a sudden onset of syncope and hypotension. As she arrived to the hospital her pressure was measured (systolic arterial blood pressure <90mmHg) and Echocardiography was done. ECG showed an extremely dilated right ventricle with septal flattening, along with sinus tachycardia. Her history revealed that she was being treated at a suburban hospital for Deep Vein Thrombosis (DVT) and that she was on Estrogen-containing Oral Contraceptives. Examination showed signs of cyanosis as well as the usage of her accessory muscles while respiration. The doctor immediately ordered a chest CT scan which showed massive clots in her bilateral main pulmonary arteries. As soon as the CT scan was done, she suddenly collapsed and after several tries of resuscitating her, the physicians declared her dead.

Answer:

Part 1: Pulmonary embolism

DVT

Case #11:

This 53-year-old male was admitted to the hospital following 2 days of intermittent midepigastric and left-sided chest pain. The pain radiated to his left arm and was accompanied by nausea and vomiting. He gave a history that included 2 years of occasional chest discomfort, a near syncopal episode 6 months prior, hypertension, a 30-year history of one-packper-day cigarette smoking, congenital blindness, and insulin-dependent diabetes mellitus. He was noted to be markedly obese and to have severe hypercholesterolemia .

At the time of admission, his enzyme studies were normal, but the EKG suggested myocardial ischemia. Two days later, he experienced an episode of severe chest pain that did not respond to nitroglycerin and was accompanied by ST-segment elevation. A cardiac catheterization demonstrated severe multivessel coronary artery stenosis. He underwent quadruple coronary artery bypass surgery. Shortly, after being taken off the cardiopulmonary bypass machine, he went into cardiac arrest. As resuscitation was being attempted by open cardiac massage, a rupture developed in his left ventricular wall that resulted in rapid exsanguination and death

Answer:

Part 1: Hemopericardium (internal hemorrhage)

Left ventricular wall rupture

Myocardial infarction

Multivessel corornary artery stenosis

CAD

Atherosclerosis

Part 2: HTN, type 1 diabetes, smoking, hypercholestronimia

Done