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CARDIOVASCULAR COMPLICATIONS POST NASAL SURGERY - A NEED FOR PSYCHOSOCIAL INTERVENTION

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ABSTRACT
Cardiac complications are common after non-cardiac surgery. As (Functional Endoscopic Sinus Surgery (FESS)). Peri-operative myocardial infarction occurs in 3% of patients undergoing major surgery. Postoperative myocardial infarction (PMI) is associated with mortality and morbidity in patients undergoing cardiac or noncardiac surgery. In other way post-operative complications are hemorrhagic or hypovolemic shock, Patients with hypovolemic shock have severe hypovolemia with decreased peripheral perfusion. Hemorrhagic shock is a life threatening condition. The management of a hemorrhagic shock, whether traumatic or not, requires early identification of the bleeding source and adequate hemodynamic drug support, to restore adequate tissue perfusion and oxygenation and should be closely monitored.

In this case 27 years old male patient, undergoes to total Bilateral Turbinectomy, unfortunately post-operative complain of severe Nasal bleeding. Hemorrhagic shock followed by Massive Myocardial Infarction and Cardiac arrest occurred.

KEYWORDS: Cardiovascular complications, Turbinectomy, Psychosocial intervention.

INTRODUCTION

Cardiac complications are common after major non-cardiac surgery. Every year, 4% of the world's population will undergo a surgical procedure, with 30% of those having major surgery in the context of at least one cardiovascular risk factor. The 30-day mortality rate for these patients is 0.5–2%; the single largest cause of death is major adverse cardiac events (MACE), mostly myocardial infarction (MI). The preponderance of hemorrhagic shock cases resulting from trauma is high. During one year, one trauma center reported 62.2% of massive transfusions occur in the setting of trauma. Patients with hypovolemic shock have severe hypovolemia with decreased peripheral perfusion. If left untreated, these patients can develop ischemic injury of vital organs, leading to multi-system organ failure. Consider the first factor is whether the hypovolemic shock has resulted from hemorrhage or fluid losses, as this will dictate treatment. When etiology of hypovolemic shock has been determined, replacement of blood or fluid loss should carried out as soon as possible to minimize tissue ischemia. Factors to consider when replacing fluid loss include the rate of fluid replacement and type of fluid be used.

Definitions

A deviated septum: occurs when your nasal septum is significantly displaced to one side, making one nasal air passage smaller than the other does. A deviated septum occurs when the thin wall (nasal septum) between your nasal passages is displaced to one side.

Turbinate hypertrophy: Refers to an excessive growth or enlargement of the turbinate**,** which are bony structures located inside the nose.
They are covered with a special skin called mucosa, and they help filter, warm, and humidify the air as you breathe.

Septoplasty: Is the surgical correction of defects and deformities of the nasal septum (the partition between the nostrils). The septum is a structure made of bone and cartilage in the central portion of the nose that separates one nasal cavity from another. When the septum is deviated, it can block one side of the nose and significantly disturb airflow.

Turbinectomy: Is a partial or complete resection of the inferior turbinate with or without the guidance of an endoscope. The microdebrider instrument is often used in this procedure in order to remove some of the soft

tissue component, and the debrider can be used even in the more complex cases of bony hypertrophy

Myocardial Infarction (MI): MI is defined by the demonstration of myocardial cell necrosis due to significant and sustained ischemia , which implies obstruction to blood flow due to plaques in the coronary arteries or , much less frequently , to other obstructing mechanisms (e.g. spasm of plaque-free arteries).

Pathophysiology: Atherosclerotic rupture leads to an inflammatory cascade of monocytes and macrophages, thrombus formation, and platelet aggregation . This leads to decreased oxygen delivery through the coronary artery resulting in decreased oxygenation of the myocardium. The inability to produce ATP in the mitochondria leads to the ischemic cascade, and therefore apoptosis (cell death) of the endocardium, or myocardial infarction.

With some exceptions due to genetic variation, coronary arteries have unique and diagnostic territorial distributions. For example, the left anterior descending coronary artery supplies blood flow to the interventricular septum, anterolateral wall, and ventricular apex. The left circumflex artery supplies blood to the inferolateral wall. The right coronary artery supplies the right ventricle. The inferior wall supplied by either the left circumflex or right coronary artery

Causes: Myocardial ischemia occurs when the blood flow through one or more of your coronary arteries is decreased. The low blood flow decreases the amount of oxygen your heart muscle receives. Myocardial ischemia can develop slowly as arteries become blocked over time. Alternatively, it can occur quickly when an artery becomes blocked suddenly.

Conditions that can cause myocardial ischemia include

- **Coronary artery disease (atherosclerosis).** Plaques made up mostly of cholesterol build up on your artery walls and restrict blood flow. Atherosclerosis is the most common cause of myocardial ischemia.
- **Blood clot.** The plaques that develop in atherosclerosis can rupture, causing a blood clot. The clot might block an artery and lead to sudden, severe myocardial ischemia, resulting in a heart attack. Rarely, a blood clot might travel to the coronary artery from elsewhere in the body.
- **Coronary artery spasm.** This temporary tightening of the muscles in the artery wall can briefly decrease or even prevent blood flow to part of the heart muscle. Coronary artery spasm is an uncommon cause of myocardial ischemia.

Risk factors: Factors that can increase your risk of developing myocardial ischemia include:

- **Tobacco. Smoking** and long-term exposure to secondhand smoke can damage the inside walls of arteries. The damage can allow deposits of cholesterol and other substances to collect and slow blood flow in the coronary arteries. Smoking causes the coronary arteries to spasm and may increase the risk of blood clots.
- **Diabetes.** Type 1 and type 2 diabetes are linked to an increased risk of myocardial ischemia, heart attack and other heart problems.
- **High blood pressure.** Over time, high blood pressure can accelerate atherosclerosis, resulting in damage to the coronary arteries.
- **High blood cholesterol level.** Cholesterol is a major part of the deposits that can narrow your coronary arteries. A high level of "bad" (low-density lipoprotein, or LDL) cholesterol in your blood may be due to an inherited condition or a diet high in saturated fats and cholesterol.
- **High blood triglyceride level.** Triglycerides, another type of blood fat, also may contribute to atherosclerosis.
- **Obesity.** Obesity is associated with diabetes, high blood pressure and high blood cholesterol levels.
- **Waist circumference.** A waist measurement of more than 35 inches (89 centimeters) for women and 40 inches (102 cm) in men increases the risk of high blood pressure, diabetes, and heart disease.
- **Lack of physical activity.** Not getting enough exercise contributes to obesity and linked to higher cholesterol and triglyceride levels. People who get regular aerobic exercise have better heart health, which is associated with a lower risk of myocardial ischemia and heart attack. Exercise also reduces blood pressure

Signs & Symptoms: Some people who have myocardial ischemia don't have any signs or symptoms (**silent ischemia**).

When they do occur, the most common is chest pressure or pain, typically on the left side of the body (**angina pectoris**). Other signs and symptoms which might be experienced more commonly by women , older people and people with diabetes include: neck or jaw pain, shoulder or arm pain, fast heartbeat, shortness of breath when you are physically active, nausea and vomiting, sweating and Fatigue

Complications: Myocardial ischemia can lead to serious complications, including:

- **Heart attack.** If a coronary artery becomes completely blocked, the lack of blood and oxygen can lead to a heart attack that destroys part of the heart muscle. The damage can be serious and sometimes fatal.
- **Irregular heart rhythm (arrhythmia).** An abnormal heart rhythm can weaken your heart and may be life threatening.
- **Heart failure. Over time, repeated episodes of ischemia may lead t**o heart failure.

Prevention: The same lifestyle habits that can help treat myocardial ischemia can also help prevent it from developing in the first place. Leading a heart-

healthy lifestyle can help keep your arteries strong, elastic and smooth, and allow for maximum blood flow.

Diagnosis: Your doctor will start by asking questions about your medical history and with a physical exam. After that, your doctor might recommend:

- **Electrocardiogram (ECG).** Electrodes attached to your skin record the electrical activity of your heart. Certain changes in your heart's electrical activity may be a sign of heart damage.
- **Stress test.** Your heart rhythm, blood pressure and breathing monitored while you walk on a treadmill or ride a stationary bike. Exercise makes your heart pump harder and faster than usual, so a stress test can detect heart problems that might not be noticeable otherwise.
- **Echocardiogram.** Sound waves directed at your heart from a wand-like device held to your chest produce video images of your heart. An echocardiogram can help identify whether an area of your heart has been damaged and isn't pumping normally.
- **Stress echocardiogram.** A stress echocardiogram is similar to a regular echocardiogram, except the test done after you exercise in the doctor's office on a treadmill or stationary bike.
- **Nuclear stress test.** Small amounts of radioactive material are injected into your bloodstream. While you exercise, your doctor can watch as it flows through your heart and lungs, allowing blood-flow problems to be identified.
- **Coronary angiography.** A dye is injected into the blood vessels of your heart. Then a series of X-ray images (angiograms) are taken, showing the dye's path. This test gives your doctor a detailed look at the inside of your blood vessels.
- **Cardiac CT scan.** This test can determine if you have a buildup of calcium in your coronary arteries , a sign of coronary atherosclerosis. The heart arteries can also be seen using CT scanning (coronary CT angiogram)

Treatment: The goal of myocardial ischemia treatment is **to improve blood flow to the heart muscle**. Depending on the severity of your condition, your doctor may recommend medications, surgery or both.

Medications: Medications to treat myocardial ischemia include:

- **Aspirin.** A daily aspirin or other blood thinner can reduce your risk of blood clots, which might help prevent blockage of your coronary arteries. Ask your doctor before starting to take aspirin because it might not be appropriate if you have a bleeding disorder or if you're already taking another blood thinner.
- **Nitrates.** These medications widen arteries, improving blood flow to and from your heart. Better blood flow means your heart doesn't have to work as hard.
- **Beta blockers.** These medications help relax your heart muscle, slow your heartbeat and decrease blood pressure so blood can flow to your heart more easily.
- **Calcium channel blockers.** These medications relax and widen blood vessels, increasing blood flow in your heart. Calcium channel blockers also slow your pulse and reduce the workload on your heart.
- **Cholesterol-lowering medications.** These medications decrease the primary material that deposits on the coronary arteries.
- **Angiotensin-converting enzyme (ACE) inhibitors.** These medications help relax blood vessels and lower blood pressure. Your doctor might recommend an ACE inhibitor if you have high blood pressure or diabetes in addition to myocardial ischemia. ACE inhibitors may also be used if you have heart failure or if your heart doesn't pump blood effectively.
- **Ranolazine (Ranexa).** This medication helps relax your coronary arteries to ease angina. Ranolazine may be prescribed with other angina medications, such as calcium channel blockers, beta blockers or nitrates.

Procedures to improve blood flow: Sometimes, more-aggressive treatment needed to improve blood flow. Procedures that may help include:

- **Angioplasty and stenting.** A long, thin tube (catheter) is inserted into the narrowed part of your artery. A wire with a tiny balloon is threaded into the narrowed area and inflated to widen the artery. A small wire mesh coil (stent) is usually inserted to keep the artery open.
- Coronary artery bypass surgery. A surgeon uses a vessel from another part of your body to create a graft that allows blood to flow around the blocked or narrowed coronary artery. This type of open-heart surgery is usually used only for people who have several narrowed coronary arteries.
- Lifestyle and home remedies: Lifestyle changes are an important part of treatment. To follow a heart-healthy lifestyle:
- **Quit smoking.** Talk to your doctor about smoking cessation strategies. Also try to avoid secondhand smoke.
- Manage underlying health conditions. Treat diseases or conditions that can increase your risk of myocardial ischemia, such as diabetes, high blood pressure and high blood cholesterol.
- Eat a healthy diet. Limit saturated fat and eat lots of whole grains, fruits and vegetables. Know your cholesterol numbers and ask your doctor if you've reduced them to the recommended level.
- Exercise. Talk to your doctor about starting a safe exercise plan to improve blood flow to your heart.
- Maintain a healthy weight. If you are overweight, talk to your doctor about weight-loss options.

- Decrease stress. Practice healthy techniques for managing stress, such as muscle relaxation and deep breathing.

Note: It is important to have regular medical checkups. Some of the main risk factors for myocardial ischemia, high cholesterol, high blood pressure and diabetes, have no symptoms in the early stages. Early detection and treatment can set the stage for a lifetime of better heart health.

Hemorrhagic shock: Is a condition of reduced tissue perfusion, resulting in the inadequate delivery of oxygen and nutrients that are necessary for cellular function. Whenever cellular oxygen demand outweighs supply, both the cell and the organism are in a state of shock

Pathophysiology: Hemorrhagic shock is due to the depletion of intravascular volume through blood loss to the point of being unable to match the tissues demand for oxygen. The body compensates for volume loss by increasing heart rate and contractility, followed by baroreceptor activation resulting in sympathetic nervous system activation and peripheral vasoconstriction. Typically, there is a slight increase in the diastolic blood pressure with narrowing of the pulse pressure. As diastolic ventricular filling continues to decline and cardiac output decreases, systolic blood pressure drops.

Due to sympathetic nervous system activation, blood is diverted away from noncritical organs and tissues to preserve blood supply to vital organs such as the heart and brain. While prolonging heart and brain function, this also leads to other tissues being further deprived of oxygen causing more lactic acid production and worsening acidosis. This worsening acidosis along with hypoxemia, if left uncorrected, eventually causes the loss of periphera1l vasoconstriction, worsening hemodynamic compromise, and death.

Etiology: Though most commonly thought of in the setting of trauma, there are numerous causes of hemorrhagic shock that span many systems. Blunt or penetrating trauma is the most common cause, followed by upper and lower gastrointestinal sources. Obstetrical, vascular, iatrogenic, and even urological sources have all been described. Bleeding may be either external or internal. A substantial amount of blood loss to the point of hemodynamic compromise may occur in the chest, abdomen, or the retroperitoneum. The thigh itself can hold up to 1 L to 2 L of blood. Localizing and controlling the source of bleeding is of utmost importance to the treatment of hemorrhagic shock but beyond the scope of this article.

Hemorrhagic Shock Signs and Symptoms

How hypovolemic shock shows up can depend on a number of things, including:

- Your age
- Your past medical care and overall health
- The cause of the shock or the source of the injury
- How quickly you lost the blood or fluids
- How much your blood volume has dropped?

Other signs of hemorrhagic shock include

- Rapid heartbeat
- Quick, shallow breathing
- Feeling weak
- Being tired
- Confusion or wooziness
- Having little or no pee
- Low blood pressure
- Cool, clammy skin

Hemorrhagic Shock Diagnosis: Your doctor will check your temperature, pulse, breathing, and blood pressure. They will check the color and feel of your skin. If you are awake and alert, they will ask about past medical issues and your overall health.

You may need more tests, including

- Imaging studies such as X-rays, ultrasounds, or CT scans
- Blood and urine tests
- Heart tests like echocardiogram and electrocardiogram (ECG)

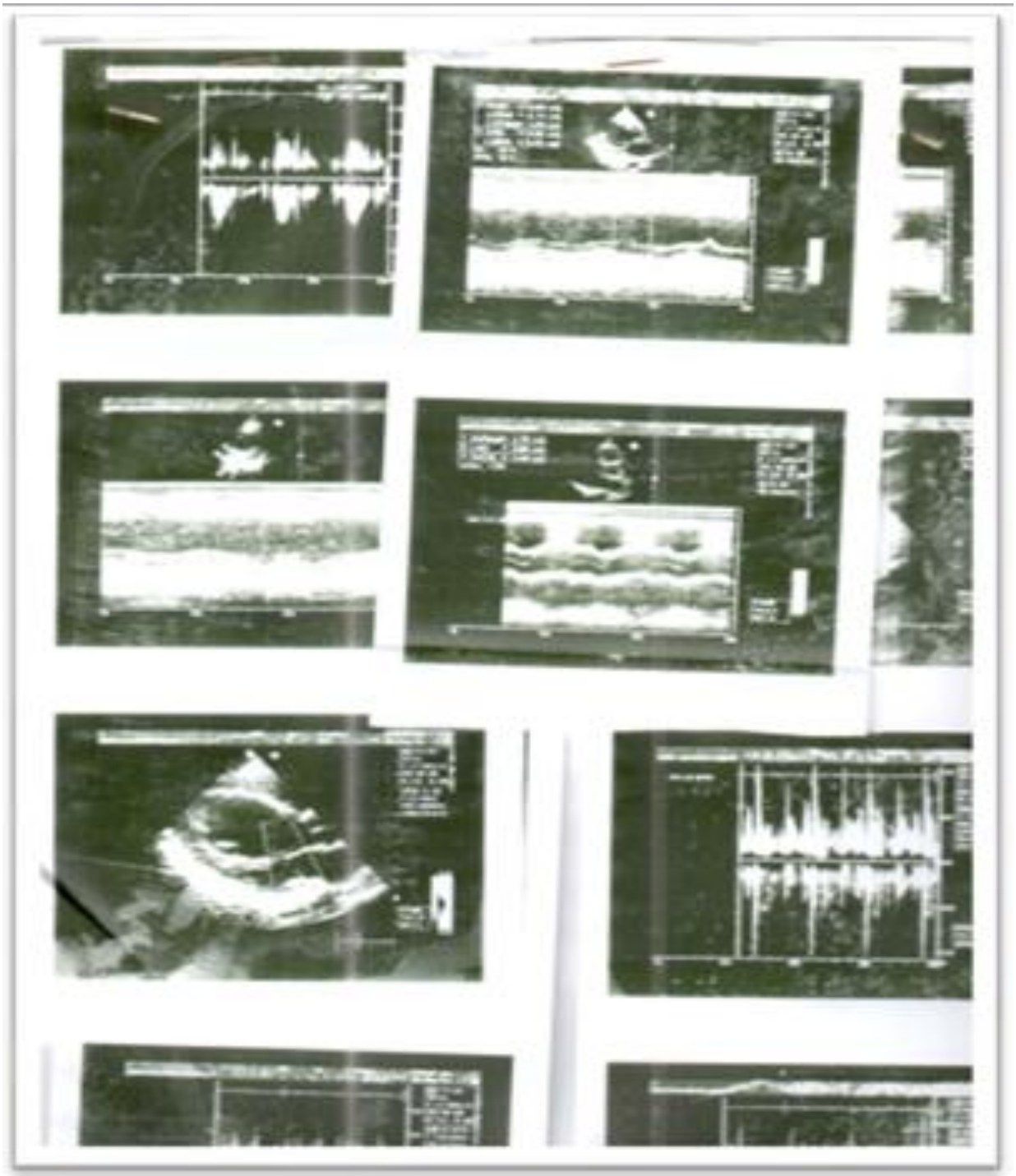
Hemorrhagic Shock Treatment: Your medical team will try to:

- Get as much oxygen as possible to all parts of your body
- Stop, or at least control, blood loss
- Replace blood and other fluids
- You will get fluids through an IV, a bag of liquid attached to a needle that goes directly into a vein. Most people who lose more than 30% of their blood volume will also need a blood transfusion. Many will need some kind of surgery, especially if they have internal bleeding

***Case Presentation**

A 27 years old male patient from Gaza/ Palestine. Married and have two children his weight 76 kg Ht. 170 cm, haven't any previous chronic diseases, his father has DM ,HTN ,CHD , his mother has Bronchial Asthma ,and HTN admitted to patient friends hospital; Non-Governmental hospital on 21.1.2013 to surgical department for Bilateral Turbinectomy. Post op the patient was discharged from the operating room to recovery room, then surgical department room. Unfortunately, after the surgery, the patient started to awake up from the effects of anesthesia, and began to complain of shortness of breathing, dyspnea, severe chest pain, dizziness, and massive nasal bleeding, hematemesis, For 4 hours after the operation, then the patient general condition deteriorated and become more worse. Pt. become unconscious, disoriented then sudden cardiac arrest has occurred. on physical examination , the pt. unconscious, disoriented, face and nose swelling, massive bleeding from nose and mouth ,V/S were, heart

rate peripheral pulseless, RR no breathing, temp low, BP not detected, O2 sat. zero, ECG show straight line. Pt. was on cardiac arrest so CPR was done immediately, then on monitor pulseless VT was present so synchronized DC shock 300 J was given. CPR continuous after synchronized DC shock till sinus rhythm return after half an hour of CPR and synchronized DC shock, then pt. intubated due to sever hypoxia and given o2 100% and referred to ICU department for intensive care and monitoring. During referring to ICU department of Governmental hospital by an ambulance accidental extubation by the Pt. occurred , pt. was irritable and confused. On ICU Department pt. semiconscious semi oriented start to complain of severe chest pain radiated to Lt. arm, shortness of breathing and dyspnea, still has massive nasal bleeding and hematemesis, B.P: 100/50 mmHg, Large pour cannula fixed in the place to keep vein open. 300 mg Hydrocortisone given I.V, Amp. Pethadine 50 mg I.V and Amp. Pramin 10 mg I.V were given, Streptokinase 1.5 MU IN 100cc Normal Saline I.V given to pt. according to cardiologist consultation for life saving, which cause extra massive nasal bleeding from operation site. ECG done, CBC and Chemistry done, bed chest X- Ray done. Pt. still complain of severe chest pain so 3mg Morphine I.V given, pt. complain of severe nasal bleeding due to streptokinase so it stop immediately, moreover ECG has done and show acute ST elevation MI (**STEMI Anterolateral**) in leads I, avL, V3-V6, complicated by developed Pulseless Tachycardia and hypotension B.P: 80/40 mmHg and cardiac arrest had occurred for second time, so synchronized DC shock 300J was given and CPR done till return to sinus rhythm , pt. re intubated and connect with mechanical ventilator machine on (SIMV mood) F.O 0.4, IMV(Freq.) 12, Tid Vol. 650, Peak 50 and Peep 5, O2 Sat. 99% physical examination done, Glasgow coma scale (GCS) was unconscious (Pt. under sedation) and disoriented to X3., Ears symmetrical auricles, nose bleeding and, nasal sinuses not patent, due to nostrils packs, no ability to smell, mouth throat and tongue moist mucous membrane, pink, teeth regular spaced, tongue pink, neck full range of motion, carotid pulsation 110 beat/minute symmetrical, thorax and lung respiratory, on inspection symmetrical chest, on percussion resonance, on auscultation abnormal breath sounds, wheezes, Crepitation , due to aspiration and back flow of blood in the lung from op. site . Heart and blood vessels, apical pulse 120 beat/minute abnormal irregular, weak, and rapid B.P: 90/50 mmHg abnormal ,hypotension Peripheral pulse dorsalis Pedis Rt. and Lt. abnormal, posterior Tibial Rt. and Lf. abnormal, radial Rt., Lf. abnormal, Audible heart Sounds was Murmurs, tow central line had inserted one in Rt. femoral vein, and another one in Rt. subclavian vein. Abdomen on Inspection and Palpation was rigid and distended to touch, no lesion, no swelling, warm to touch, round and symmetrical. Abdomen rises with inspiration in synchrony with chest, Lower Extremities on Inspection were bilaterally symmetrical and equal, right and left feet have complete fingers, skin color was as same as the other parts of the body Posterior Lower also normal skin color. pt. was in real dilemma has massive STEMI **and Hemorrhagic shock** at the same time so it was important to be noted to do good management for these problems. **Echocardiography** done it was show (septoapical hypokinesia, also lateral wall hypokinesia, E.F 30%, MR (mitral valve regurgitation) Grade I, other valves normal, no pericardial effusion, no thrombi or coagulation).



DISCUSSION

On 22/1/2013 on first day in to ICU department pt. intubated and under sedation and mechanical ventilation, (on SIMV mood) F.O 0.4, IMV(Freq.) 12, Tid Vol. 650 , Peak 50 and Peep 5, O2 Sat. 99% Vital Signs were measured and recorded B.P 84/53 mmHg , H.R 107 b.p.m, Temp. 37c. Folly. Catheter indwelling for measuring intake and output. Oro Gastro tube inserted and connect with collection bag for decompression and contain of 900 ml bloody discharge. CBC: Hgb. 8.8 g/dl, WBC 9.3 K/ul , Hct. 24.8 % Plat. 114 k/ul. and full Chemistry were done creatinine 1.16 mg/dl AAT 192 mg/dl LDH 2075 U/L CK (MB) 284 U/L BUN 52 mg/dl GL 86 mg/dl, ABG done it was PH 7.4 PCO2 43 PO2 42 HCO3 27 BE 3 SO2 80%, chest X- Ray done as recommended, Blood group done and it was (O-ve), bleeding still continues from the nose so streptokinase stop immediately give hexacapron 1000mg in 100 ml N/S I.V at rate 25 ml / hr. blood transfusion started after vital signs measured especially Temp. it was normal, check off blood unites done by a doctor and the two nurses after cross matching and compatibility tests done of 4 units of fresh frozen plasma, 8 units of cryoprecipitate, given 2500 cc of heamasil, 3 gram Hexacapron in 100 cc of normal saline given at rate of 25 mL/hr. . Normal Saline 500 ml given I.V every 8 hrs.

and Dextrose Saline 500 ml given I.V every 8 hrs. suction done frequently from endotracial tube and from mouth cavity to remove secretion and improve breathing and O2 saturation.

Medication
Claforan 1 g / 8 hrs.
Flagyle 0.5 g / 8 hrs.
Randine 50 mg / 8 hrs.
Lasix 20 mg / 8 hrs.
Plavix 75 mg /24 hrs.
B . Aspirin 100 mg / 2hrs.
Clexane 80 mg / 12 hrs.
Lipdex 80 mg /24 hrs.
Tamiflu 75 mg /12 hrs.
Convertin 5 mg / 24 hrs.
Cardioloc 2.5 mg / 24hrs.
Synthomycin eye ointment / 8 hrs.
Nystatin oral drops / 6 hrs.
Normal saline 500 ml / 8 hrs.
Amiodorone Amp. In 500 ml D5%W / 12 hrs.
6 Amp 500 mg. Hexacapron (3 g) in 100 ml N/S at rate 25 ml/ hr.
D/S 500 ml / 8 hrs.
Beatryl 0.5 mg + Dormicum 20 mg in 50 ml N/S at rate 5 ml / hr.

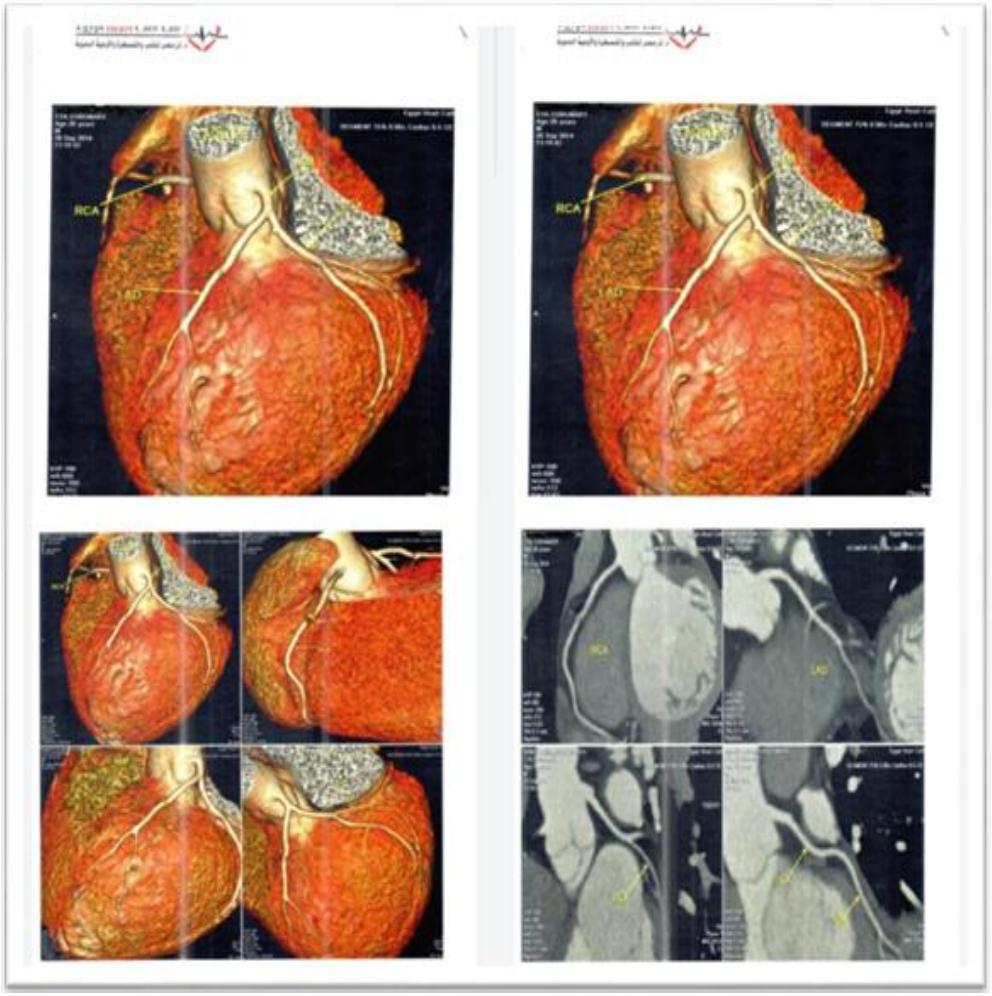
After that the patient was transferred to complete treatment abroad quickly, and he was transferred to hospitals in the occupied interior to the Hasharon Hospital, which is specialized in the city of Beit Hikka, Tel Aviv District, due to the deterioration of his health greatly.

Patient was underwent to total Bilateral Turbinectomy in his nose on **21/1/2013** but Unfortunately, after the surgery, the patient started to awake up from the effects of anesthesia, and began to complain of shortness of breathing, dyspnea, severe chest pain, dizziness, and massive nasal bleeding, hematemesis, For 4 hours after the operation, then the patient general condition deteriorated and become more worse. **Patient** became unconscious, disoriented then sudden cardiac arrest has occurred. That situation complicated by mixed cardiogenic shock and hypovolemic shock resuscitation effort was carried on. Lt. Ventricle function was deteriorated by low ejection flow. less than 30 %, mild mitral valve regurgitation Echocardiography done more one time, ECG done daily and show acute ST elevation MI (STEMI Anterolateral) in leads I, avL , V3-V6, chest X-Ray done daily, CBC done daily and frequently every shift and show dropping of HGB it was 8.4 g/dl on referral, full chemistry and daily ABG analysis were done daily and frequently, as show above.

The patient stayed for 15 days in Hasharon Specialized Hospital and received necessary treatments there. T hen he left the hospital on 7/2/2013 and returned to the Gaza Strip. Follow up in hospitals in the Gaza Strip after the appearance of some improvement in his health and stability, and he is now following up with cardiologists as well as ENT doctors as a heart patient who needs constant follow-up and treatment For the heart throughout his life.

The patient in 28/9/2014 made Cardio vascular multi slides CT scan in the Republic of Egypt , and it was shown through the result and conclusion the following findings:

- Atherosclerotic epicardial coronaries.
Moderate mid LADlesion
Calcium score is calculated to be 0 by Agatston score.
Dilated L V, Impaired LVEF (48 %) with SWMA.
And also do holter ECG report summary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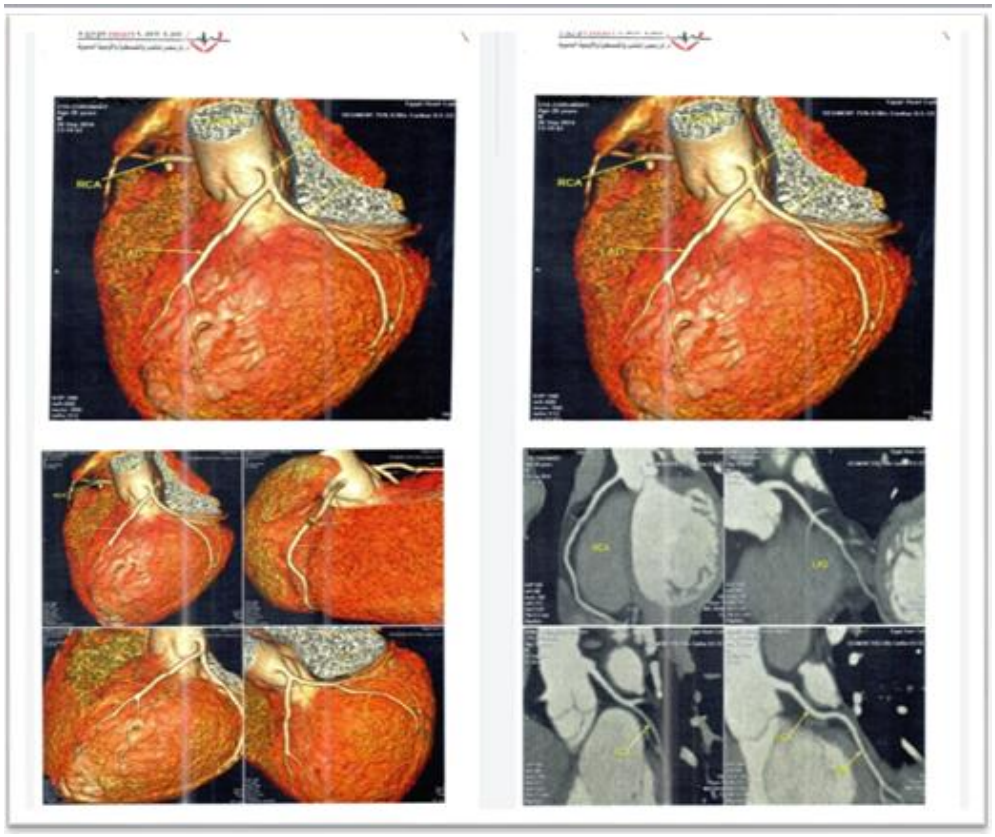
RCA
LAD
RCA
LAD

CONCLUSION

The average heart rate was 92. The minimum heart rate was 48 at 12: 13. The maximum heart rate was 165 at 14: 41. Pauses greater than 2.5 seconds were 0. Ventricular ectopy was 2182, with 0 V – Runs and 7 V - Pairs, Ventricular Bigeminy events were 6 and Ventricular Tigemin events were 8. Supraventricular ectopy was 43, with 0 V – Runs and 0S V – Pairs, Supraventricular Bigemini events were 0 and Supraventricular Trigemini.

Literature Review

1-Journal of the American Heart Association 16 April 2019

research conducted in patients with ischemic cardiomyopathy . The pathophysiology results in systolic dysfunction due to myocardial injury and ischemia, and most patients with symptomatic HF have reduced ejection fraction (<40%), although patients with CCS may also have symptomatic HF and a preserved ejection fraction. (%50_<)Patients with symptomatic HF should be managed clinically according to the 2016 ESC heart failure Guidelines.

2-Journal of the American Heart Association October 17, 2020

Cardiogenic shock (CS) is a common cause of mortality, and management remains challenging despite advances in therapeutic options. (CS) is caused by severe impairment of myocardial performance that results in diminished cardiac output, end-organ hypo perfusion, and hypoxia. Clinically this presents as hypotension refractory to volume resuscitation with features of end-organ hypo perfusion requiring pharmacological or mechanical intervention. Acute myocardial infarction (MI) accounts for **81%** of patient in CS

3-International Medical Case Reports Journal

Management of ST-elevation myocardial infarction (**STEMI**) in the setting of anterior epistaxis: focused on antiplatelet and antithrombotic therapies

Conclusion: The main choice in handling patients with (**STEMI**) is to use primary **PCI** but in special case such as (**STEMI**) accompanied by active nasal bleeding, **UFH** (Un Fractionated Heparin) can be an alternative choice since it has a rapid onset of antithrombotic activity, short half-life, administered as a continuous intravenous infusion and can be rapidly reversed with protamine sulfate.

4- European Heart Journal (2018)

(2017 **ESC** Guidelines for the management of acute myocardial infarction in patients presenting with ST-segment elevation)

Epidemiology of ST-segment elevation myocardial infarction (STEMI)

Worldwide, ischemic heart disease is the single most common cause of death and its frequency is increasing. However, in Europe, there has been an overall trend for a reduction in ischemic heart disease mortality over the past **three decades**. Ischemic heart disease now accounts for almost **1.8** million annual deaths, or **20%** of all deaths in Europe, although with large variations between countries. The relative incidences of (**STEMI)** and (**NSTEMI)** are decreasing and increasing, respectively. Probably the most comprehensive European (**STEMI)** registry is found in Sweden, where the incidence rate of (STEMI) was **58** per **100 000** per year in **2015.** In other European countries, the incidence rate ranged from **43** to **144** per **100 000** per year. Similarly, the reported adjusted incidence rates from the USA decreased from **133** per **100 000** in **1999** to **50** per **100 000** in **2008**, whereas the incidence of **(NSTEMI)** remained constant or increased slightly. There is a consistent pattern for **(STEMI)** to be relatively more common in younger than in older people, and more common in men than in women

*** Psychosocial Issues**

Can lead manifest as anxiety, depression, fatigue and withdrawal from family and social life, individual, can require extensive psychosocial support to deal with this issue, May of the psychosocial issues individuals, the experience is related to dyspnea, shortness of breath lead to anxiety.

The psychosocial manifestation was affected on the personal level of the patient as well as on the level of his family, parents, wife, brothers and children, especially as he did not previously suffer from any health problems in the past.

Parents family/

Parents and pt.'s wife became greatly anxious and sad when their son and her husband came to him and they could not change something. The mother and pt.'s wife were accompanying with him during the operation and worsened his health after the operation until his heart stopped watching from afar and were crying severely and they could not change anything and they took prayers to God and implored him to save their pt. From this great ordeal until God answered her prayer. Although the patient's mother suffers from a bronchial asthma , she held on to herself so as not to draw the attention of the medical team to her and stop caring for her son, and this attitude is ethical par excellence expressing the extent of the mother's concern and love for her children.

At work level/

The patient nearly lost his job as a nurse in the Ministry of Health due to the sudden complications that appeared in his healthy life.

Social activity/

The patient suffers from a lot of loss and lack of social relations due to the difficult health situation that hinders the building and practice of social relationships.

Daily Activity/
There has become a clear imbalance in daily activity, especially because of the lack of ability to carry out activities and exercise, which were considered important in his life.

Economic situation: There has become an apparent defect in the patient's financial and economic situation due to the increase in expenses on drug bills, medical treatments, and other.

*** Ethical and legal malpractice related to the case**
Maintaining safe care is the first ethical and legal duty of any hospital, and all health professionals. Setting and meeting its staffing standards is a hospital's regulatory and moral duty. Moreover, as researchers produce the data needed to ensure safe patient care and as these data are introduced as evidence in malpractice cases, there will be more pushback from courts as judges and juries react to a cold calculus of profits over human life. Indeed, in many instances, it may be the healthcare executives who make staffing.

Malpractice and negligence
A 27 years old male patient with chronic sinusitis with polyps, turbinate hypertrophy and septal deviation underwent septoplasty, bilateral inferior turbinate reduction, polypectomy and bilateral endoscopic sinus surgery in 2013. There was no complication noted during surgery and the procedure was concluded uneventfully, When the patient awoke in the recovery room he complained of dyspnea, shortness of breathing, sever chest pain and massive nasal bleeding filling the nasal and oral cavities for 4 hours without medical intervention then he unconscious, disoriented then cardiac arrested has occurred, in this time he was seen for her initial post-operative visit by doctor. CPR was done immediately, then on monitor pulseless VT, CPR continuous after synchronized DC shock till sinus rhythm return after half an hour of CPR and synchronized DC shock, then pt. intubated and referred to ICU department for intensive care, Streptokinase I.V given to pt. according to cardiologist consultation for life saving , which cause extra massive nasal bleeding from operation site, so streptokinase stop immediately, Gauze was packed into the nasal cavity, nasopharynx, oral cavity, and oropharynx followed by placement of large-bore IV catheters.

After 3 months, he began to have purulent nasal drainage a CT scan is made that shows the existence of a complete Inferior turbinectomy.

Inferior turbinectomy may lead to empty nose syndrome (ENS) which resulted in nasal dysfunction, significantly impact patient's quality of life, Inferior Turbinectomy, Is It a Nasal Crime.

CONCLUSION
Cardiac complications remain the leading cause of morbidity and mortality after non-cardiac surgery, and despite a rapidly evolving literature on this topic,many questions remain incompletely answered; for instance, what is the pathophysiology of MINS, and how can it be prevented, and, what is the optimal medical pre-optimization of the high cardiac risk patient? Nonetheless, there is growing evidence that improvements in outcomes can be achieved for the high cardiac risk patient, by identifying relevant risk factors and appropriately triaging them to a more advanced postoperative care environment staffed by peri-operative physicians.

The first nationwide was published: January 25, 2019 Epidemiology of coronary artery disease and stroke and associated risk factors in Gaza community –Palestine That study was the first nationwide endeavor that provides information about the prevalence of CVDs and the level of cardio vascular risk factors among Palestinian community in Gaza. A rate of CVD has been reported in our population, 10% reflecting a serious health problem in Gaza strip. Obesity, hypertension and diabetes, were highly prevalent. Increased, effort and research to monitor and improve strategies and policies for reducing cardiovascular risk are mandatory WHO Global Plan Action for the prevention of NCDs 2013-2020 identified seven major risk factors including harmful use of alcohol, current tobacco smoking, high blood pressure, intake of salt or sodium, diabetes and obesity, physical inactivity (referred as the 25 by 25 risk factors) with the goal of reducing premature mortality from NCDs by 25% (WHO/GPA, 2013). The Eastern Mediterranean Region (EMR) is comprised of 23 countries with a population of 583 million people. Arabs living in this region share language, cultural background as well as lifestyle. However, they vary in their sociodemographic profile, political, economic situation and health system, several of these nations have long years of political instability (Mokdad et al., 2016). Countries in EMR have classified into three groups of health systems according to population health outcome, health system performance and health budget levels. Palestine is part of the second group. Modernization, economic and technologic development advances have led to rapid demographic changes in the Arab world inducing an increase in death rate (Alwan, Alwan & Jabbour, 2012). Morbidity related to NCD is accounting for 47% and estimated to reach 60% by the year 2020 (Khatib, 2004). More than 2.2 million people in EMR died from NCDs representing 53% deaths. Thirty five per cent of death from NCDs were in persons younger than 60 years (WHO EMRO, 2016). The ischemic heart disease was the leading cause of death in this region accounting for 14.3% of deaths (Mokdad et al., 2014). Rapid increase in NCDs suggests that the change in disease burden was more affected by behavioral than genetic factors. Arabs became less physically active and consumed unhealthy diet (Mehio Sibai et al., 2010). Data

collected by STEPS Wise WHO for chronic disease 2010- 2011 among adults aged 15-65 years in Eastern Mediterranean countries showed the high prevalence of NCDs risk factors. One quarter of adult population was hypertensives, daily current tobacco smoking exceeds 30% in males, and obesity was alarming particularly in women. Six out ten countries in the world reported the highest prevalence of diabetes with a rate up to 20% (IDF 2009, n.d.).

Recommendations

Increase caretakers' recognition of signs through Extensive health communication activities by detection of causal relation-ships between risk factors and Myocardial Infarction and Hemorrhagic shock, also preventive measures should be taken in your mind to prevent Peri-operative complication especially Myocardial Infarction and Hemorrhagic shock.

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