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Anaesthetic Management of case of Dilated Cardiomyopathy Posted for Emergency Appendectomy

Dr. Jaldeep Patel,Dr. Vivek Kadavala , Dr. Aditi Zalavadia, Dr. Rachit Shah

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ABSTRACT :-
The anesthetic management of a patient with dilated cardiomyopathy (DCM) undergoing non-cardiac surgery poses a challenge for anesthesiologist either due to pre-existing or a risk of precipitating congestive heart failure. We report a successful use of General Anaesthesia for emergency appendicectomy in a patient of DCM. Different anesthetic concerns and agents, some recent advances are also discussed.

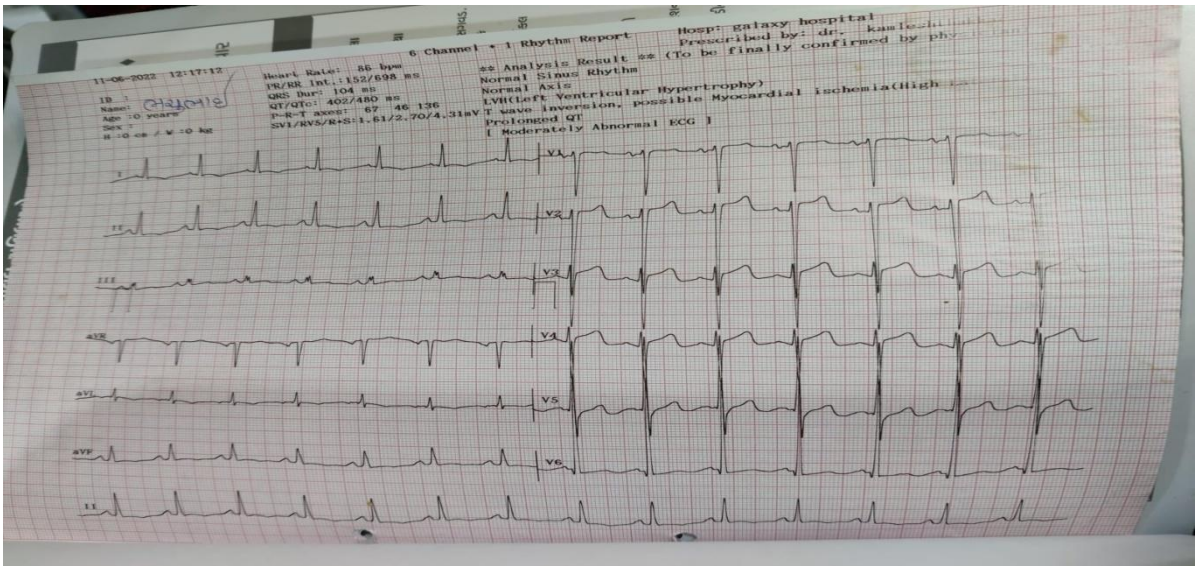
I. INTRODUCTION:-

Dilated cardiomyopathy (DCM) is primarily a disease characterized by the left ventricle (LV) or biventricular dilatation, systolic dysfunction, and normal LV wall thickness. DCM is defined by the presence of: (a) Fractional myocardial shortening less than 25% and/or left ventricular ejection fraction (LVEF) less than 45%; and (b) LV end diastolic diameter greater than 117% excluding any known cause of myocardial disease.[1] DCM is the most common type of non-ischemic cardiomyopathy, the third most common cause of heart failure, and the most common indication for cardiac transplantation

Case report :-

A 44y/M came to emergency with Abdominal pain associated with nausea, vomiting, constipation was scheduled for emergency Appendectomy.
He was known case of Dilated Cardiomyopathy since 1 month. He gave history of hospital admission 1 month ago with complaint of hematemesis & other features suggestive of congestive heart failure.
His symptoms were well controlled by Tab. Isosorbide Dinitrate (20mg , 1-0-1) Tab. Hydralazine (37.5mg , 1-0-0)
Tab. Torsemide(10mg , 1-0-1) Tab. Metoprolol (23.75mg , 0-0-1) Tab. Amlodipine (5mg, 1-0-1) Tab. Atorvastatin (20mg, 0-0-1) Tab. Aspirin (7.5mg, 1-0-1) **Vitals:-**
Heart rate-72/min , Blood pressure- 144/100mmhg
Temprature - Increase , Spo2 - 98% on room air
There were no ronchi or rales on auscultation and heart sounds were normal.

Investigation :-
Hb - 14.1 gm/dl
Platelet - 2,59,000 per ml of blood
RFT :- Urea - 85 mg/dl , Creatinine - 2.1 mg/dl
LFT & S. electrolyte - Within Normal Range Chest Xray - Revealed cardiomegaly , lung fields were clear



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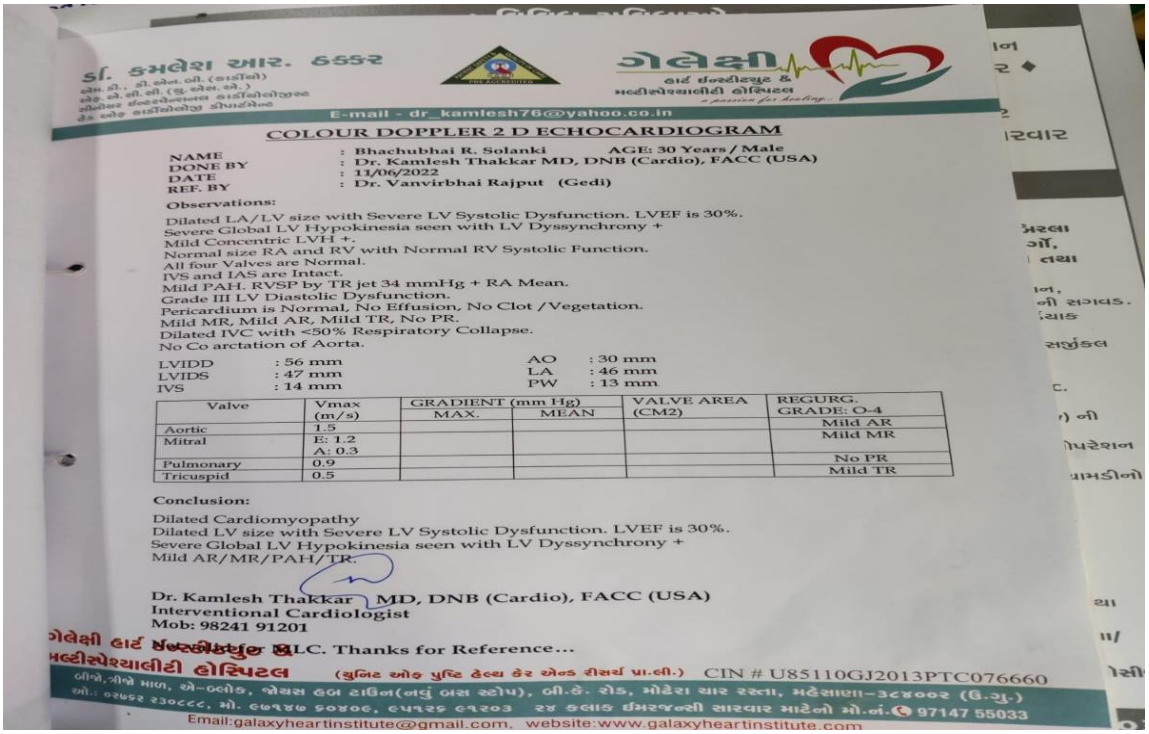

E-mail - dr_kamlesh76@yahoo.co.in

COLOUR DOPPLER 2 D ECHOCARDIOGRAM

NAME : Bhachubhai R. Solanki AGE: 30 Years / Male
DONE BY : Dr. Kamlesh Thakkar MD, DNB (Cardio), FACC (USA)
DATE : 11/06/2022
REF. BY : Dr. Vanvirbhai Rajput (Gedi)

Observations:
Dilated LA/LV size with Severe LV Systolic Dysfunction. LVEF is 30%.
Severe Global LV Hypokinesia seen with LV Dyssynchrony +
Mild Concentric LVH +.
Normal size RA and RV with Normal RV Systolic Function.
All four Valves are Normal.
IVS and IAS are Intact.
Mild PAH. RVSP by TR jet 34 mmHg + RA Mean.
Grade III LV Diastolic Dysfunction.
Pericardium is Normal, No Effusion, No Clot /Vegetation.
Mild MR, Mild AR, Mild TR, No PR.
Dilated IVC with <50% Respiratory Collapse.
No Co arctation of Aorta.

LVIDD : 56 mm
LVIDS : 47 mm
IVS : 14 mm
AO : 30 mm
LA : 46 mm
PW : 13 mm

Valve	Vmax (m/s)	GRADIENT (mm Hg) MAX.	GRADIENT (mm Hg) MEAN	VALVE AREA (CM2)	REGURG. GRADE: 0-4
Aortic	1.5				Mild AR
Mitral	E: 1.2 A: 0.3				Mild MR
Pulmonary	0.9				No PR
Tricuspid	0.5				Mild TR

Conclusion:
Dilated Cardiomyopathy
Dilated LV size with Severe LV Systolic Dysfunction. LVEF is 30%.
Severe Global LV Hypokinesia seen with LV Dyssynchrony +
Mild AR/MR/PAH/TR.

Dr. Kamlesh Thakkar MD, DNB (Cardio), FACC (USA)
Interventional Cardiologist
Mob: 98241 91201

LLC. Thanks for Reference...

CIN # U85110GJ2013PTC076660

Email:galaxyheartinstitute@gmail.com, website:www.galaxyheartinstitute.com

Anaesthetic Management:-
High risk consent was obtained.
20G pink intra cath taken in right fore arn.

Premed - Inj. Ondansetron 4mg iv Inj. Glycopyrrolate 0.2mg iv
Inj. Fentanyl 100 microgram iv Inj. Lignocaine 60 mg iv

Induction - Inj. Etomidate 16 mg iv
Inj. Succinylcholine 100 mg iv

-Intubation done with 8 no. Cuffed ET tube.
-Anaesthesia was maintained by O2, N20, Sevoflurane & intermittent Atracurium.
-Surgery was completed in 1 hour.
-There was minimal response to intubation, his preintubation BP was 140/100mmHg and HR was 72/min while post intubation BP was 160/104 mmHg and HR was 137/min. Which was settled down to 80/min in 1 min without any intervention.
-End tidal carbon dioxide was 33-37 mm Hg and airway pressure was 15-18 cm H2O.
-Injection paracetamol 1 gm intraoperatively was given for postoperative pain management.
-TAP block was given for intra op minimum sympathetic stimulation & also for post op pain management.
Intraoperative vitals were remains within normal range. Patient safely exubated in deep Anaesthesia so, hemodynamic changes were minimal.

II. DISCUSSION :-

Goals of anaesthetic management consist of 1) Myocardial depression should be avoided 2) normovolemia should be maintained 3) Avoid overdose of drugs during induction as circulation time is slow. 4) Ventricular after load is avoided 5) avoid sudden hypotension when regional anaesthesia is a choice

Anaesthetic management needs to be customized for those with left ventricular ejection fraction below 45%. Drugs like ketamine, etomidate and narcotics have minimal depressing effect on cardiac function and are used frequently .Oxygen carrying capacity should be adequate. The main determinants of oxygen carrying capacity are cardiac output and hemoglobin.

III. CONCLUSION :-

Patients with dilated cardiomyopathy are a challenge to the attending anesthesiologist. These patients can be well managed by thorough preoperative assessment and medical management, formulating the good anesthetic plans and prompt diagnosis and management of complications.