Case Report

Post extubation negative pressure pulmonary oedema

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Abstract

Pulmonary oedema is a serious complication during perioperative period. There are cardiogenic and noncardiogenic causes. We are presenting negative pressure pulmonary oedema as non-cardiogenic cause in our patient .Our patient 42years oid ASA Grade I Posted for elective laparoscopic cholesystectomy He was not suffering from any medical problem, non smoker, non alcoholic, labour by occupation. Intraoperative period vitals were stable .Immediately after extubation patient went into respiratory distress. We excluded other causes of pulmonary oedema in our patient. We managed the patient in ICU with O2, propped up position, nebulisation, intravenous inj frusemide inj aminophylline 250 mg as single dose. Patient responded well and within 36 hours patient maintained spo2 without oxygen and shifted in ward.

Keywords: Pulmonary oedema; General Anaesthesia; Laproscopic surgery; Young Patient; Extubation.

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INTRODUCTION

Laparoscopic surgery is aboon for both surgeons and patients, as it causes minimal tissue trauma, minimal postoperative pain and thus early recovery from anaesthesia and early discharge from hospital. Even though with minimum duration of surgery, minimal tissue trauma and early recovery patient may went into pulmonary oedema after extubation. There are very few case reported regarding post extubation negative pressure pulmonary oedema.

CASE REPORT

45 years old male patient 55kg, average height, was admitted in surgical department as Gall stones posted electively for Laproscopic Cholecystectomy. He was non smoker, non-alcoholic, labour by occupation. He was not suffering from any medical problem, e.g. B.P., DM, IHD, COPD. He was not having drug related reactions in the past..One day prior surgery P.A.C. done and was ASA Grade I patient .All relevant investigations were normal. Night before surgery Tablet Ranitidine150mg tabl *et al* prazolam 0.25mg given and was NBM from 12 midnight. Next day morning at10am patient was taken inside O.T. 20G intracath inserted Monitors attached, NIBP, E.C.G., SPO2. all are within normal limit. Premedicated with inj ranitidine 50mg given,injglycopyrolate0.2mg,inj midazolam1.5mg,inj pentazocine30mg. Preoxygenated with 100%o2on mask with Bains circuit for few minutes, Induction with injThiopentone275mg given till loss of eye reflex confirmed mask ventilaton and then inj suxamethonium 100mg given. Intubated with CET No.8.5, single attempt Tube fixed at 21cm Air entry checked and equal on both sides. M\O O2+N2O+Sevoflurane inj vecuronium as muscle relaxant on controlled ventilation with closed circuit Main stream ETCO2 MONITOR was attached. Intraoperative vitals monitors were normal ETCO2 was 30-35 Surgery was completed within one hour After regaining spontaneous respiration Reversal given with inj Neostigmine 2.5mg + inj glycopyrolate0.4mg Thorough oral suction done, patient responding to commands we extubate the patient, while extubating patient bite the cuff of endotraceal tube

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After extubation patient was irritable, tachypnoeic 45-50, fall in spo2 80-85% complaining about not able to breathe was tossing in the ot table. We convinced him everything is fine and we hold the o2 mask with bain circuit with 8 lit\min Still patient was not comfortable On auscultation bilateral Bronchospasm, basal crepts were present. we immediately gave inj frusemide20mg, inj aminophylline 250mg over 10min,inj Hydrocortisone100mg With these Respiratory Rate slightly decreased to38-40\min spo2 88-90% we continued o2 with bain circuit, We had also given nebulisation with salbutamol +ipratopium respules After all these on auscultation bronchospasm is decreased but basal crepts were present. Patient shifted in ICU and continued o2, propped up position, spo2 94-95%, Chest x-ray done which did not show any abnormality. ABG showed po2 =60mmHg, co2 =30mmHg, pH =7.356.We continued nebulisation 8 hourly and o2 supplementation with plain mask 5lit|min Patient became stable in 18 hours and was off o2 after 36hours

DISCUSSION

Pulmonary oedema is the serious complication during perioperative period. There are cardiogenic and non-cardiogenic cause. In cardiogenic cause patient is having Ischaemic heart disease, cardiomyopathy Diabetes Hypertension, Valvular heart disease. In noncardiogenic causes fluid overload, Aspiration, Air embolism, Anaphylaxis, Blood Transfusion induced TRALI, Drug induced, post extubation, and Laryngospasm induced pulmonary oedema. In our case 45 years male patient ASA Grade I Non-smoker non alcoholic labour by occupation posted for elective Laparoscopic Cholecystectomy. The intraoperative period was uneventful, only after immediate extubation patient went into pulmonary oedema. The cardiogenic cause is unlikely. In non cardiogenic causes, Aspiration is unlikely as we had given inj Ranitidine 50mg as premedication and inj ondensterone4mg after completion of surgery. Patient received 750ml of crystalloids intraoperatively and did not received any colloids or Blood, so chances of fluid overload. Anaphylaxis or TRALI is less likely. In our case post extubation patient became Tachypneic, Desaturation, Spo2 (85-90%) complained of difficulty in Breathing, on Auscultation of chest bilateral Bronchospasm, and basal crepitations. Suction did not revealed any Gastric Contents or Pink frothy sputum. There were reports of negative pressure pulmonary oedema after extubation. The diagnosis of negative pressure pulmonary oedema is made on assessment of combination of history, symptoms, clinical signs, investigations and excluding other causes. The non-cardiogenic pulmonary oedema, i.e. Negative pressure Pulmonary Oedema in Anaesthesia usually resulted after extubation (Incidence 0.1%) The most common risk factors are young age male sex head neck surgery, unintentional endobronchial intubation .Our patient was given propped uo position O2 on mask, inj Frusemide 20mg, inj Aminophylline250mg Nebulisation with Salbutamol respules and with these treatment patient became normal within 48 hours.

CONCLUSION

Negative pressure pulmonary oedema is dreaded complication immediately after extubation, commonly occur in young patient. It requires high degree of suspicious and immediate management for this life threatening complication.

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