

Schizophrenia and anaesthesia: A Case Report

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Abstract: Schizophrenia is commonest psychiatric manifestation frequently encountered by anaesthetist in various surgeries. Risk is mainly due to uncooperative patient and antipsychotic drugs. These drugs potentiate the medical illnesses and have lots of interactions with anaesthetic drugs. In our case report we emphasized on perioperative anaesthetic management in a schizophrenic patient posted for cataract surgery.

Keywords: Schizophrenia, Anaesthesia, Antipsychotic drug.

INTRODUCTION

Schizophrenia is psychiatric illness presenting a challenge to anaesthetist. Due to lack of patient cooperation these patients are under evaluated most of time. These patients can't lie still so general anaesthesia always remains a choice for surgery, compare to regional anaesthesia. Patients with chronic schizophrenia are on multiple antipsychotic drugs taking for years and have interaction with general anaesthetic drugs and can contribute to delayed awakening, cardiovascular instability, arrhythmias, neuroleptic malignant syndrome, and sudden cardiac death during general anaesthesia.

CASE REPORT

We are presenting a case of 65 year old lady, known case of schizophrenia posted for cataract surgery under general anaesthesia. History was given by son. She was on tab risperidone(3mg) and tab trihexphenidyl (2mg) since last 15 years. Patient was restless, talkative, speaking incomprehensible words. No other medical or surgical comorbidities present. METS could not be assessed because of noncooperation by patient. Heart rate was 50/min regular and BP was 100/60 mmHg. Body weight was 50Kg and BMI was 23Kg/m². Preoperative all biochemical investigations were within normal limits. Baseline ECG was irregular because patient could not be able to lie down still but grossly ECG complexes were normal. In echo EF was 55% with no other abnormality.

Preoperative guidelines of NPO was followed. Morning dose of risperidone and trihexphenidyl taken at 6 am with sips of water. After taking informed, written consent by guardians patient was taken in OT, standard ASA monitors applied, baseline vitals noted, 18 G canula taken with help of assistant, Inj. Ringer lactate fast started. Patient induced with Inj. fentanyl 80

microgram, Inj. thiopentone 175 mg. Muscle relaxant vecuronium 4 mg given after checking adequacy of ventilation. Airway secured with proseal no.3#. Maintenance of anaesthesia was done with O₂+N₂O+Sevo 1% on closed circuit. Adequate precautions were taken to maintain normothermia.

Just after induction BP dropped to 80/50 mm Hg, fluid rushed and inj. mephentermine 3mg given, BP improved to 110/70 mmHg. After 5 min. of procedure, multiple VPCS started in ECG, but patient was haemodynamically stable. Immediately plane of anaesthesia was deepened by increasing sevoflurane concentration, Inj. Xylocard 60 mg iv given, patient responded very well and sinus rhythm returned. After 1 hr of uneventful intraoperative period, anaesthesia was reversed with Inj neostigmine 2.5 mg and glycopyrolate 0.4 mg. For postoperative nausea and vomiting inj. dexamethasone 4mg given. In postoperative period, patient was comfortable, normothermia maintained and vitals monitoring was done for 2 hrs.

DISCUSSION

In general population 10% of population is suffering from Psychiatric illnesses. Schizophrenia account for 20% of all psychiatric illnesses. Schizophrenia is a disease characterized by thought disorders, delusions and hallucinations. Problems encountered by anaesthetist are due to disease itself and due to antipsychotic drugs. Due to communication problem and non-obeying of commands, consent and history should be taken by relatives as we did in our case. These patients cannot lie down still so regional anaesthesia is not a good option, as in this case cataract surgery was planned under GA and due to the same problem METS and cardiac status couldn't be assessed except echo report. Schizophrenic patients are impaired in the biological response to stress, are at increased risk

for medical illnesses such as cardiovascular and respiratory disease and diabetes mellitus [1].

Antipsychotic drugs are divided in two groups –Typical which act on dopamine receptor antagonism (Haloperidol, chlorpromazine), Atypical ones (Risperidone, Olanzapine, Clozapine) acts by D2, 5HT₂, α receptor antagonism [1]. Sedation, Postural hypotension and Extra pyramidal side effects (EPS) are commonest side effects of these drugs[2]. EPS is less encountered with atypical antipsychotics. Antipsychotic drugs are usually perscribed with centrally acting cholinergic drugs to decrease EPS symptoms. Antipsychotics decreases seizure threshold. Neuroleptic malignant syndrome is a rare complication with .02-2.4% patients exposed to antipsychotics [3]. ECG abnormalities may present like prolonged QT, PR interval and Torsade's de pointes[4]. Temperature regulation during anesthesia may be impaired due to the effects of dopamine blockade on the hypothalamus by antipsychotic drugs [5].Endocrine side effects include water intoxication due to increased secretion of ADH in response to stress [1]. Glucose intolerance by decreasing insulin secretion [1]and gyaenacomastia in male patient. These patients are prone to postoperative wound infection due to immune suppression due to decreased IL-6 and IL-8[6]. Due to decreased conduction by c fibers and altered NMDA receptor these patients lack pain sensitivity, so they may have silent MI in perioperative period[7]

In postoperative period schizophrenic patients are more prone to develop confusion than normal patients[1] Postoperative ileus because of sympathetic over activity can occur after abdominal surgery[1]. Anaesthetic management in these patients includes a thorough preoperative evaluation and adequate understanding of antipsychotics drugs pharmacodynamics. Antipsychotic medication should be continued perioperatively, as abrupt withdrawal may result in recurrence of psychotic symptoms [8]and increase in the incidence of postoperative confusion but these drugs potentiate the hypotensive and sedative effects of general anesthetic agents[3].Therefore care should be taken with induction of anesthesia .Drugs with minimal hemodynamic alteration should be preferred and tailored according to individual responses.

Normothermia should be insured by temperature monitoring and adequate covering the patient as antipsychotic drugs alter the temperature regulation. Hypothermia itself may cause cardiac events. All the inhalational anaesthetic agents are safe except enflurane because it causes hypotension, arrhythmias, seizures, and malignant hyperthermia in schizophrenia combination with antipsychotics[9]. All routinely using intravenous induction anaesthetic agents are acceptable in these patients but ketamine has to be avoided because it can prolong the hallucinations or

delirium after surgery .[10] but a study done by kudoh concluded that the frequency of postoperative confusion in schizophrenic patients with ketamine, propofol, and fentanyl was significantly less than sevoflurane anesthesia (30% versus 54%)[11]. For perioperative pain management opioids and NSAIDs are used but tramadol should not be given as tramadol may itself cause psychiatric symptoms: altered mood (elation or dysphoria) hallucinations, confusion, sleep disturbance and nightmares. Tramadol may also precipitate serotonin syndrome when combined with antidepressant medication and tramadol reduces the seizure threshold[1].Ondansetron causes QT interval prolongation so it should be avoided[12]. Metoclopramide causes EPS side effects so it should be avoided [13]. Epidural analgesia in abdominal surgery can reduce the incidences of postoperative paralytic ileus [14].

Surgical stress worsens the psychotic symptoms after surgery in schizophrenic patients [1]. In the acute state such as hallucination or postoperative confusion, antipsychotics such as haloperidol are administrated intramuscular / intravenous for treatment. A benzodiazepine may sometimes be needed to sedate the patient's further[1].Sudden death in chronic schizophrenic patients is five times more frequent compared with the general population[15]. so utmost care has to be taken in intraoperative as well as in postoperative period for haemodynamics and psychological management of schizophrenic patients.

REFERENCES

1. Kudoh A. Perioperative management for chronic schizophrenic patients. *Anesthesia & Analgesia*. 2005 Dec 1; 101(6):1867-72.
2. Lanctot KL, Best TS, Mittmann N, Liu BA, Oh PI, Einarson TR, Naranjo CA. Efficacy and safety of neuroleptics in behavioral disorders associated with dementia.
3. Casey DE. Side effect profiles of new antipsychotic agents. *The Journal of clinical psychiatry*. 1996.
4. Haddad PM, Anderson IM. Antipsychotic-related QTc prolongation, torsade de pointes and sudden death. *Drugs*. 2002 Aug 1; 62(11):1649-71.
5. Young DM. Risk factors for hypothermia in psychiatric patients. *Annals of clinical psychiatry*. 1996 Jan 1; 8(2):93-7.
6. Naudin J, Capo C, Giusano B, Mege JL, Azorin JM. A differential role for interleukin-6 and tumor necrosis factor- α in schizophrenia?. *Schizophrenia research*. 1997 Aug 29; 26(2):227-33.
7. Dowlkin RH, Clark WC, Lipsitz JD, Amador XF, Kaufmann CA, Opler LA, White SR, Gorman JM. Affective deficits and pain insensitivity in schizophrenia. *Motivation and Emotion*. 1993 Sep 1; 17(3):245-76.

8. Kudoh A, Katagai H, Takase H, Takazawa T. Effect of preoperative discontinuation of antipsychotics in schizophrenic patients on outcome during and after anaesthesia. *European Journal of Anaesthesiology (EJA)*. 2004 May 1; 21(5):414-6.
9. Vohra SB. Convulsions after enflurane in a schizophrenic patient receiving neuroleptics. *Canadian journal of anaesthesia*. 1994 May 1; 41(5):420-2.
10. Dundee JW, Wyant G. *Intravenous anaesthesia*, Edinburgh: Churchill Livingstone, 2nd ed. 1988:152.
11. Kudoh A, Katagai H, Takazawa T. Total intravenous anaesthesia with ketamine decrease incidence of postoperative psychosis emergence in schizophrenic patients. *J Clin Anesth* 2002; 14:107–10.
12. Baguley WA, Hay WT, Mackie KP, Cheney FW, Cullen BF. Cardiac dysrhythmias associated with the intravenous administration of ondansetron and metoclopramide *Anesth Analg*. 1997 Jun;84(6):1380-1
13. Ganzini L, Casey DE, Hoffman WF, McCall AL. The prevalence of metoclopramide-induced tardive dyskinesia and acute extrapyramidal movement disorders. *Archives of internal medicine*. 1993 Jun 28; 153(12):1469-75.
14. Kudoh A, Ishihara H, Matsuki A. Pituitary-adrenal and parasympathetic function in chronic schizophrenic patients with postoperative ileus or hypotension. *Neuropsychobiology*. 1999 Apr 8; 39(3):125-30.
15. Ruschena D, Mullen PE, Burgess P, Cordner SM, Barry-Walsh J, Drummer OH, Palmer S, Browne C, Wallace C. Sudden death in psychiatric patients. *The British Journal of Psychiatry*. 1998 Apr 1; 172(4):331-6.