

Research Journal of Pharmaceutical, Biological and Chemical Sciences

Anaesthetic Management of a Morbid Obese Patient – 141 Kgs for Diagnostic Dilatation And Curettage.

Selvamani, and Wasim Ahmed*.

Department of Anaesthesiology, Pain Medicine & Critical Care, Sree Balaji Medical College & Hospital, CLC works road,
Chrompet, Chennai 600044, Tamil Nadu, India.

ABSTRACT

Obesity has increased tremendously over the past 20 years in both children and adults. There are many issues to consider with the obese patient starting from the airway. We are reporting a case of morbid obese patient posted for Dilatation and Curettage for Abnormal uterine bleeding.

Keywords: Morbid Obesity, Lithotomy, TIVA, Paracervical Block

**Corresponding author*



INTRODUCTION

The Merriam webster Dictionary defines obesity as condition characterized by excessive accumulation and storage of body fat. Calculating a patient's BMI is the best way to evaluate obesity because it takes height into consideration.

BMI = weight in kgs / height in meter square

We are reporting a case of BMI 55.07 posted for Dilatation and Curettage.

CASE REPORT

41 years old female was posted for D&C. She is a known case of Type 2 Diabetes mellitus on oral hypoglycemic agent, Hypertensive on T.Amlodipine 5mg BD, Hypothyroidism on T. Thyroxine 50microgram.

ON CLINICAL EXAMINATION

Patient was morbidly obese, Weight is **141** kgs, and height is 160 cms, Waist circumference – 130 cms. Neck circumference is 50cms.

CVS – S1, S2 heard, no murmur, HR – 80/min, regular, BP – 130/80 mm of Hg

RS – NVBS, SPO2 – 96 - 98% in room air

ASSESSMENT OF AIRWAY

Mouth opening & neck movement are normal.

Inter incisor distance –4cms

Thyro-mental distance – 7cms

Sterno-mental distance – 14cms

Mandibulo-hyoid distance – 5 cms

Upper lip bite test – N

She was assessed under ASA 3 , Mallampati class 2[4]

Medical & endocrine opinion was obtained.

INVESTIGATIONS

FBS – 117 mg% HbA1C-6.4

Renal and hepatic profiles, Thyroid functions were normal

X – Ray chest – Normal, ECG – WNL

Previous surgical history – patient underwent two LSCS under Spinal analgesia & laparoscopic appendectomy under General anaesthesia.All were uneventful.

Patient was advised to continue all the medications on the day of surgery with a sip of water.

ANAESTHETIC TECHNIQUE

Preoxygenated for 5minutes in RAMP position. Airway crash cart kept ready to manage any difficult airway.Monitors applied were ECG, NIBP, Temp, EtCO2, and Pulse Oximetry. [4]

IVF – Ringer lactate was started

Aspiration prophylaxis – Inj. Ondansetron 8 mg, Inj. Ranitidine 50 mg IV given.

Premedicated with Inj.Glycopyrrolate 0.4 mg, Inj. Fentanyl 200 mics, Inj.Midazolam 1 mg IV slowly given.Inj.Propofol 100 mg given slowly.

Patient position was changed to lithotomy position with great care & difficulty.

Paracervical block was given with 10 ml of 2% Lignocaine.

Throughout the Procedure, O2 was supplemented via Magill's circuit. A nasopharyngeal airway was introduced gently after lubrication. All the vital parameters were well maintained. The recovery was smooth.

DISCUSSION

Globally obesity was considered as rarity until middle of 20th century.

Obesity is a multifactorial disease involving social, cultural, physiologic, psychological, metabolic, endocrine, genetic and behavioral components.

Obesity and its associated health concerns now represent major cause of morbidity and mortality and have enormous impact on health care spending. The BMI has been widely accepted calculation.

Classification	BMI	Risk factors
Underweight	18.5	Increased
Normal weight	18.5 – 24.9	Least
Over weight	25 – 29.9	Increased
Obese		
Class1	30 – 34.9	High
Class 2	35 – 39.9	Very high
Class 3	40 – 49.9	Extremely high
Super obese	50 and above	Exceedingly high

According to waist circumference

Waist	Normal weight	Over weight	Obese
< 102 cms < 88 cms	Least risk	Increased risk	High risk
> 102 > 88 cms	Increased risk	High risk	Very high risk

Neck circumference (NC) measurement is a simple screening measure, as an index of upper body fat distribution that can be used to identify overweight and obese people. A neck circumference > or = 35.5 cm in men and > or = 32 cm in women should be considered the cutoff point for overweight/obesity.

MAJOR HEALTH RISKS ASSOCIATED WITH INCREASING BMI

Metabolic syndrome	30% of middle aged people have features of metabolic syndrome
Type 2 - Diabetes	90% of type 2 diabetes have BMI > 23 kg / sq m
Hypertension	<ul style="list-style-type: none"> - 5 x risk with obesity - 66% is linked to excess weight - 85% hypertension is associated with a BMI of 25 kg/m²
Coronary artery and stroke	<ul style="list-style-type: none"> - 3.6 x risk of CAD for each unit change in BMI - Dyslipidemia progressively develops as BMI increases from 21 with a rise of LDL - 70% obese women with hypertension have LVH - Obesity is a contributing factor to CCF in > 10% of patients - Overweight/obesity plus hypertension is associated with increased risk of ischemic stroke
Respiratory effects	- Neck circumference > 43cm in men & 40.5 cms in women is associated with obstructive sleep apnoea and daytime somnolence and development of pulmonary hypertension[5]
GIT & Hepatic	<ul style="list-style-type: none"> - Intra-abdominal & intragastric pressure increased - LOS tone decreased, prone for aspiration - Fatty infiltration of liver

MAJOR CVS CHANGES

- Cardiac output, Stroke volume increases
- Prone to develop SHT, PHT, LVH, CAD[2]

MAJOR RESPIRATORY SYSTEM CHANGES

- Increase in work of breathing due to increase in chest wall mass and decrease in thoracic compliance
- Increase in total O₂ consumption & CO₂ production
- Volumes & capacity changes as follows[2.8]

Tidal volume	Normal
Inspiratory Reserve Volume	Decreased
Expiratory Reserve Volume	Greatly decreased
Residual volume	Normal
FRC (RV + ERV)	Greatly decreased
VC (IRV + Vt+ EERV)	Decreased
Total Lung Capacity	Decreased
FEV1	Normal / slightly decreased
MMEF	Normal / slightly decreased

LITHOTOMY POSITION

Classical lithotomy is hip flexed 80 – 100 degree from the trunk; legs abducted 30 – 45 degree from the midline. The knees flexed until the lower legs are parallel to the torso, legs are held by support or stirrups.

The physiological changes includes –

- Preload increases causing transient increase in cardiac output, to lesser extent CVP & ICP.
- Abdominal viscera displace diaphragm cephaloid, reduce lung compliance.
- Normal lordosis curvature is lost, potentially aggravate any previous low backache
- Neural injury – common peroneal nerve is commonest injury due to compression of nerve between lateral head of fibula & the bar holding the legs
- Lower extremity compartment syndrome is a rare complication.[12]

All these effects are exaggerated enough to obstruct venous return.[11]

PARACERVICAL BLOCK

Local Anaesthetic agent injected submucosally into the fornix of vagina lateral to the cervix to block nerve transmission through paracervical ganglion which lies lateral & posterior to the junction of cervix and uterus.

This block does not affect somatic sensory fibres from perineum; it offers no pain relief for second stage of labour. [10]

Complications include local anaesthetic toxicity, postpartum neuropathy and infection.

CONCLUSION

In our case with BMI – 55.07 though the surgical procedure is minor, but the risk for the Anaesthesiologist are more. But with safe technique & vigilance monitoring the procedure was safe. The recovery was smooth; patient was awake at the end of the procedure. The performance of paracervical block provided adequate analgesia and also reduced the requirement of Anaesthetic agents.[3]

REFERENCES

- [1] Eichenberger A.S., Wicky S, et al: Morbid obesity and postoperative pulmonary atelectasis : an underestimated problem. *Anaesth Analg* 95: 1788 – 1792, 2002
- [2] Bray GA. Pathophysiology of obesity. *Am J Clin Nutr.*1992;55(suppl): 488 – 494
- [3] Adams JP, Murphy PG. Obesity in Anaesthesia and intensive care. *Br j Anaesth*, 2000: 85: 91 - 108
- [4] Ogunnaike Bo, Jones SB, Jones DB, et al: Anaesthetic considerations for bariatric surgery. *Anaesth Analg* 95: 1793 – 1805, 2002
- [5] Alam K, Lewis, JW, Stephens JN, et al : obesity metabolic syndrome and, sleep apnoea : all proinflammatory status, *obes Rev* 2007; 8: 119 -127
- [6] Jones RL , Nzekwu MM. The effects of body mass index on lung volumes. *Chest.* 2006: 130: 827 – 833
- [7] Hines RL, Marshal KE. *Stoelting Anaesthesia and Co-existing disease.* 5th ed. Philadelphia; Churchill Livingstone, Elsevier; 2008: 297 - 300
- [8] Sprung J, Whelleg D.G., Falcone T, et al : The impact of morbid obesity, pneumoperitoneum and posture on respiratory system mechanics and oxygenation during laparoscopy, *Anaesth Analg* 94: 1345 – 1350, 2002
- [9] Sturm R: Increases in clinically severe obesity in United States, 1986: *Arch Internal med* 163 : 2119 – 2128, 2003
- [10] Martin JT: *Lithotomy In: Martin JT, Warner MA, ed positioning in anaesthesia & surgery* 3rd edition Philadelphia : WB Saunders : 1997
- [11] Warner MA, Martin JT, Schroeder DR, et al : Lower extremity motor neuropathy associated with surgery performed on patients in lithotomy position. *Anaesthesiology* 1994; 81: 6 -12
- [12] Warner ME, La Master LM, Thoeming A.K. et al: compartment syndrome in surgical patients, *Anaesthesiology* 2001; 94: 705 – 708
- [13] Shnider, SM, Asling, JH, Holl, JW, Margolis, AJ. Paracervical block anesthesia in obstetrics. I. Fetal complications and neonatal morbidity. *Am J Obstet Gynecol.* 1970;107:619–625.