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

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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

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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% Lignocaaine.

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, psychologic, 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.

<table>
<thead>
<tr>
<th>Classification</th>
<th>BMI</th>
<th>Risk factors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Underweight</td>
<td>18.5</td>
<td>Increased</td>
</tr>
<tr>
<td>Normal weight</td>
<td>18.5 – 24.9</td>
<td>Least</td>
</tr>
<tr>
<td>Over weight</td>
<td>25 – 29.9</td>
<td>Increased</td>
</tr>
<tr>
<td>Obese</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Class 1</td>
<td>30 – 34.9</td>
<td>High</td>
</tr>
<tr>
<td>Class 2</td>
<td>35 – 39.9</td>
<td>Very high</td>
</tr>
<tr>
<td>Class 3</td>
<td>40 – 49.9</td>
<td>Extremely high</td>
</tr>
<tr>
<td>Super obese</td>
<td>50 and above</td>
<td>Exceedingly high</td>
</tr>
</tbody>
</table>

According to waist circumference

<table>
<thead>
<tr>
<th>Waist</th>
<th>Normal weight</th>
<th>Over weight</th>
<th>Obese</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; 102 cms &lt; 88 cms</td>
<td>Least risk</td>
<td>Increased risk</td>
<td>High risk</td>
</tr>
<tr>
<td>&gt; 102 &gt; 88 cms</td>
<td>Increased risk</td>
<td>High risk</td>
<td>Very high risk</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Metabolic syndrome</th>
<th>30% of middle aged people have features of metabolic syndrome</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type 2 - Diabetes</td>
<td>90% of type 2 diabetes have BMI &gt; 23 kg / sq m</td>
</tr>
<tr>
<td>Hypertension</td>
<td>- 5 x risk with obesity - 66% is linked to excess weight - 85% hypertension is associated with a BMI of 25 kg/m2</td>
</tr>
<tr>
<td>Coronary artery and stroke</td>
<td>- 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 &gt; 10% of patients - Overweight/obesity plus hypertension is associated with increased risk of ischemic stroke</td>
</tr>
<tr>
<td>Respiratory effects</td>
<td>- Neck circumference &gt; 43cm in men &amp; 40.5 cm in women is associated with obstructive sleep apnoea and daytime somnolence and development of pulmonary hypertension[5]</td>
</tr>
<tr>
<td>GIT &amp; Hepatic</td>
<td>- Intra-abdominal &amp; intragastric pressure increased - LOS tone decreased, prone for aspiration - Fatty infiltration of liver</td>
</tr>
</tbody>
</table>
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]

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal</td>
<td>Inspiratory Reserve Volume</td>
</tr>
<tr>
<td></td>
<td>Expiratory Reserve Volume</td>
</tr>
<tr>
<td></td>
<td>Residual volume</td>
</tr>
<tr>
<td>FRC (RV + ERV)</td>
<td>Greatly decreased</td>
</tr>
<tr>
<td>VC (IRV + Vt+ EERV)</td>
<td>Decreased</td>
</tr>
<tr>
<td>Total Lung Capacity</td>
<td>Decreased</td>
</tr>
<tr>
<td>FEV1</td>
<td>Normal / slightly decreased</td>
</tr>
<tr>
<td>MMEF</td>
<td>Normal / slightly decreased</td>
</tr>
</tbody>
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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 fornx 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