

# Obesity in gynecological surgery

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## ABSTRACT

Despite the effort made by authorities, obesity is rising worldwide. Together with the multiple issues that obesity is bringing with it, the surgical outcome can be influenced significantly. In case of morbid obesity, preoperative assessment of the cardiopulmonary and respiratory system is vital as the compromise of either might be fatal. Obese patients tend to develop hemodynamic instability, hypoxia intolerance, deep venous thrombosis, wound infection and decreased drug clearance. This review aims to underline obesity risks as well as their management.

**Keywords:** obesity, surgery, cardiopulmonary system, respiratory system

## INTRODUCTION

Obesity is defined as an excessive fat accumulation presenting a risk to health more than [1]. From 1975 to 2016, the prevalence of overweight or obese children and adolescents aged 5-19 years increased more than four-fold from 4% to 18% globally. In 2016, 1.9 billion people, 18 years and older, were overweight. More than 650 million were obese. Once considered a problem only in high-income countries, overweight and obesity are rising dramatically in low- and middle-income countries, especially in urban agglomeration [1].

In most settings, body mass index is used as the principal assessment tool. However, different measures of obesity, such as waist-hip ratio are more appropriate and more precise. In today's obesity epidemic, surgery in people with high BMI is a common thing. What worries surgeons and anaesthetists is a BMI over 40 [2].

## PREVENTION OF COMPLICATIONS

The first thing that should be bear in mind is that it is the indication for gynaecological surgery. If this surgery implies general anaesthesia, spinal anaesthesia, or can be done under local anaesthesia. If another option is suitable such as losing weight for obese women suffering of incontinence, this should be discussed with the patient. For benign elective surgeries, a gym and diet program is most helpful in a motivated patient who has the will to lose weight. Also, non-surgical options such as Mirena device (Bayer A.G) can be inserted for menstrual dysfunction. Women with proved gynaecological malignancies or suspicion of malignancy should be urgently and carefully assess. Any weight loss program should be deterred [3,4].

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## PREOPERATIVE EVALUATION

Weight, height, waist circumference should be measured and clearly documented in the notes. Each obese patient should have a cardiovascular and a respiratory evaluation alongside an anaesthetic clinic appointment for women with BMI over 40. It is a well-known fact that obesity is associated with diabetes mellitus, coronary disease and hypertension. Also, atrial fibrillation is increased. In addition, obstructive sleep apnoea is associated with obesity and can cause sudden death syndrome [5]. If pulse oximetry is below 95% this should trigger further tests [6,7].

A further issue with the obese population is obstructive sleep apnoea, a condition associated with sudden death during sleep from myocardial infarction or arrhythmia.

## PULMONARY EMBOLISM (PE) AND DEEP VEIN THROMBOSIS (DVT) PREVENTION

PE risk and DVT are higher in obese people than those with a normal BMI. Clotting factors such as factor VIII and fibrinogen present raised level in obese women. Mobility post-surgery is reduced, increasing the risk of DVT. Although, exceptionally seldom, obese women might be on contraception or HRT, such treatment should be cancelled 4 weeks before surgery. During surgery antithrombotic stockings and intermittent pneumatic compression are recommended. LMWH (Low molecular weight heparin) is recommended 2 hours post-surgery during hospitalisation and one week afterwards. If there is surgery for malignancy, LMWH should be prescribed for four weeks [8].

## SURGERY THEATRE SET UP

Surgery in morbid obese women involves a lot of persons and not all hospitals have the necessary equipment for this type of surgery. Therefore, appropriate training and clear communication is of utmost importance. This is necessary for safety of both staff and patient alike. Handling of obese person is always challenging. Each item in the operating room should be label with its maximum weight. A typical operating table can hold 130-160 kg, whereas some surgery tables can hold 300 kg.

Moreover, extensions at the table are available to prevent patient adipose tissue overhanging the sides of the table. In terms of anaesthesia even cannulation can be difficult task in obese patients. General anesthesia can be difficult even for experienced doctors and ventilation can be difficult [6,9].

## LAPAROSCOPIC SURGERY

In expert hands, laparoscopic surgery can be safely and efficiently performed. It used to be a rel-

ative contraindication as entry is difficult and views are suboptimal. Also, in Trendelenburg position, extra amount of fat can stress ventilation. Definitely, the advantages of laparoscopic surgery even in Obese women are clear now, and are translated in less ileus, shorter recovery time, fewer wound infection and fast mobilisation. A consensus document published by RCOG advises against skin elevation in obese women, as this increases the failure entry rate. For Veress needle, incision should be made at the basement of umbilicus and the needle introduced sprightly into abdomen [10-12].

## OPEN SURGERY

Abdominal incision and closures are a dilemma in obese women. These patients are prone to wound infection and dehiscence. Several reasons, as listed in table 1, are involved in this issues.

TABLE 1. Etiology for wound closure failure [11]

|  |
|--|
| Decreased oxygen perfusion                 |
| Tension and ischemia along sutures lines   |
| Immune impairment                          |
| Lack of cleaning in pannus and groin area. |

In obese women, doing an incision at the pannus level is extremely attractive. This is associated with an increased risk of infection, due to humidity and anaerobic germs. Antibiotics administration, 1 h before the surgery, can lower these type of complications [7]. Visualisation and pelvic surgery is complicated, with an increased number of complications. Good assistance and retraction is vital for a successful surgery. With distorted anatomy, removal of cervix and closure of vaginal vault is tricky even in expert hands. Flexible illuminators are available for deep cavities surgery [13]. Removal of panniculus has been reported, but this requires the presence of a plastic surgeon, extra operating time and increase in transfusion requests. In closing the wound, good haemostasis is important, as well as avoiding excessive cautery used, which can increase tissue ischemia and necrosis resulting in wound infection [14].

If it feasible, the best option for an obese woman would be vaginal surgery. It is associated with lower complications compared with laparotomy but five times rate of operative complications has been reported compared to non-obese women [15]. Early feeding and mobilisation will help recovery alongside physiotherapy for avoiding chest complications. In addition, a proper analgesia will allow early ambulation.

## CONCLUSIONS

Because of the widespread obesity, all gynaecological surgeons will have to deal with these issue.

They have to be aware of the problems that can arise either for patients or for the staff. If a patient requires a certain surgical procedure while conservative measures could be applied, a thorough discussion with the patient is recommended, even a

second referral to another colleague. All units should have guidelines and protocols for obese patients. Continuing staff assessment and appraisal should be carried out to ensure maintenance of competency.

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