Bariatric and Metabolic Surgery Can Prevent People with Obesity from COVID-19 Infection

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The COVID-19 pandemic has infected more than 8.9 million globally and caused death of nearly 469,587 people (<https://www.who.int/emergencies/diseases/novel-coronavirus-2019/situation-reports>). Published literature shows that the predictors of poor outcomes in COVID-19 infection are obesity, hypertension (HT), and type 2 diabetes (T2DM) [1], (<https://www.icnarc.org/Our-Audit/Audits/Cmp/Reports>). Thrombotic events were noted to be an aggravating cause of death [2]. Obstructive sleep apnea (OSA) patients are more susceptible for respiratory infection and have poor outcomes (<https://www.icnarc.org/Our-Audit/Audits/Cmp/Reports>).

Obesity is the recipe for disaster for COVID-19 infection. Obesity is associated with greater risk of HT, T2DM, and OSA [1]. Thromboembolic risk is higher in these patients than in the general population [1]. Low vitamin-D level is prevalent in patients with obesity and is considered a risk factor for COVID-19 [3]. The immune system, a vital factor in the pathogenesis of COVID-19, plays an important role in obesity-induced adipose tissue inflammation [4]. Angiotensin-converting enzyme 2 (ACE2) is a major target tissue by COVID-19, and the level of its expression in adipose tissue is higher than that in the lung tissue [4]. Treatment with specific anti-hypertensive medications increases expression of ACE2 in these patients increasing the risk to susceptibility to COVID-19 [4]. People with obesity can shed the Influenza A virus 42% longer than adults without obesity [4]. Adipose tissue can act as a “reservoir” for Influenza A, HIV, cytomegalovirus, and human adenovirus Ad-36 [4]. By comparison, these two factors might apply with COVID-19 in view of its similarity.

COVID-19 pandemic is predicted to make the obesity pandemic worse. Lockdown restrictions lead to decrease in physical activity, limited access to healthy food, worsening mental health condition, and deterioration of economic condition and will only precipitate obesity faster [3]. The reports from the USA, UK, and Italy that obesity has brought COVID-19 in younger population are worrying (<https://www.icnarc.org/Our-Audit/Audits/Cmp/Reports>), [5, 6].

Bariatric and Metabolic Surgery (BMS) is proven treatment for obesity [1]. However, National and International Societies (International Federation for the Surgery of Obesity and Metabolic Disorders-IFSO) has postponed all elective BMS [7, 8]. Delay of surgery will increase the disease load in these patients. As such BMS is underused due to social stigma and financial factors [1]. There were also concerns that BMS alters immunity and these patients are at higher risk of getting infected by COVID-19 [8].

The questions arise are as follows: Are patients with previous BMS safe in COVID-19 times? What is the incidence of COVID-19 infection in people who had previous BMS? Between March 10 and May 4, 2020, a total of 1439 patients with highly suspected or confirmed COVID-19 by reverse transcription polymerase chain reaction (RT-PCR) test were treated in our tertiary bariatric National Health Service (NHS) hospital in London. About 619 (43%) patients were of white ethnicity. A total of 478 patients needed admission due to severe disease. There were 279 males (58.3%). Mean age was 57 years. The hospital coding was checked to see which of these patients had BMS (gastric band, sleeve gastrectomy, gastric bypass). For completeness we cross-checked these 1439 patients to all the patients who had BMS at our hospital in the past decade. Both analyses showed that during this peak COVID-19 period in London only one patient, a female, who had BMS in the past presented to our hospital and was treated successfully. Our face-to-face clinics were abandoned during the pandemic, and hence, we have started a bariatric helpline phone. None of our BMS patients had approached seeking help with COVID-19 related problems.

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We can conclude two possibilities with these observations. Patients with BMS surgery are not at increased risk of COVID-19 infection compared with the general population. Patients with obesity who had BMS, decreases their fat stores, improves their comorbidities, and hence makes them less susceptible to severe outcomes if they catch COVID-19 infection.

World Health Organization (WHO) mentions that COVID-19 may never go away (<https://www.who.int/emergencies/diseases/novel-coronavirus-2019/situation-reports>). We need to strategize to fight these two pandemics, COVID-19 and obesity, simultaneously [1] (<https://www.icnarc.org/Our-Audit/Audits/Cmp/Reports>). The British Prime Ministers comment that he believed his weight was one of the reason why he was seriously ill with COVID-19 and his plans to launch an anti-obesity campaign has brought a new hope and vigor in the fight against obesity. This has prompted the British All-Party Parliamentary Group (APGG) on Obesity and the British Obesity and Metabolic Surgery Society (BOMSS) to recommend the government to implement a national obesity treatment strategy (<https://bariatricnews.net/node/547>) [9]. BMS is the answer. It should be given priority when the states are planning to restart the elective healthcare activities [10]. We already know that BMS is cost-effective and pays back for itself in few years' time. Meanwhile, large international prospective studies should be done to further understand the relation between obesity, BMS, and COVID-19.

Compliance with Ethical Standards

Conflict of Interest The author declares that he has no conflict of interest.

Ethical Approval This type of study does not need ethical approval.

Patient Consent Not needed for this study.

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