



## MINIMALLY INVASIVE SURGERY DURING COVID 19 ERA IN A TERTIARY CARE CENTRE OF INDIA

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**ABSTRACT**

**Background and Objectives:** There has been a drastic reduction in the number of elective surgeries during the covid era due to many reasons like unavailability of universal testing for all patients, false negative results, cost of using personal protective equipment (PPE) in all cases and fear of contracting covid 19 by the doctors and operation theater staff. This article gives an overview of how minimally invasive surgery was done a tertiary care government centre of Assam during covid era using limited resources and maintaining safety of healthcare staff as well as patients. **Methods:** The patients were admitted a week before the scheduled date of surgery and RTPCR for covid 19 was done. Cases who tested negative were posted for surgery. Positive cases were deferred for a month after they tested negative. The surgeons, anaesthetists and operation theater staff did not wear PPE but used N95 masks. **Results:** A total of 51 cases were done from March 2020 to October 2020 in the Department of Obstetrics and Gynaecology, Gauhati Medical College and Hospital, and none of the healthcare staff or patients contracted covid 19. **Interpretation and Conclusions:** Minimally invasive surgeries can be performed safely in covid era by judicious use of resources.

**KEYWORDS :** Covid era , Laparoscopy, Minimally invasive surgeries, Minimum resources, Safety**INTRODUCTION:**

The world was introduced to a novel severe acute respiratory syndrome coronavirus-2 (SARS-CoV-2) that has affected 65.4 million people worldwide as on 4.12.2020 and caused 1.51 million deaths. In India alone 9.57 million have been affected and 1,39,000 have died as on 4.12.2020. The most alarming is that these numbers continue to rise with every passing day. As of 3.12.2020, Government of Assam has confirmed a total of 2,13,000 cases and 985 deaths. The peak was seen in September. The total number of cases in Assam on 19.09.2020 was 155453 including 29362 active cases. As the whole world struggled to cope with this new virus, many elective and non urgent procedures were stopped to channel medical resources towards the emergency. Many concerns arose regarding risk of virus transmission in the operation theater during laparoscopic surgeries.

Like the rest of the country, elective procedures were curtailed for a brief period in our state Assam. However, being a tertiary care centre catering to a lot of whole of lower Assam districts, elective procedures were resumed in Gauhati Medical College and Hospital. In this paper, we are reporting the minimally invasive surgeries carried out in the Department of Obstetrics and Gynaecology of Gauhati Medical College and Hospital during the covid era.

Laparoscopy has many advantages over conventional abdominal and pelvic surgeries such as short hospital stay, rapid recovery, lesser bleeding and is very suitable for gynaecological diseases. An essential part of laparoscopy is creation of pneumoperitoneum which can cause aerosol exposure in the operating team. Besides, large amounts of smoke is produced by the electrical energy which also contributes to aerosol generation. Presence of SARS-CoV-2 virus in the gastrointestinal mucosa has increased the concern for exposure to virus during aerosol generating procedures (AGPs).<sup>2,3</sup>

For a resource poor state, it is not practical to use personal protective equipment (PPE) for every case. Doing universal RTPCR testing is not feasible and then there is always a risk of false negative results. The elective cases cannot be postponed indefinitely and the safety of surgeons, anaesthetists and operating team staff is also very important. With this paper, we aim to provide insights how minimally invasive surgeries were done in a limited resource setting in a tertiary care centre and the safety of healthcare team and patients maintained during the covid era.

**METHODOLOGY**

The minimally invasive surgeries done in the Department of Obstetrics and Gynaecology from the month of March 2020 to October 2020 are analysed from existing records. The patients were admitted in the hospital one week before the day of surgery and RTPCR was done. Cases which were negative were put up for surgery. Among all the

patients, one patient had tested positive. Surgery was postponed for a month after she tested negative. Chest X ray was done as a routine preoperative test but HRCT of thorax was not done. General anaesthesia was given in the laparoscopy cases while hysteroscopy was done under sedation. The surgeons wore N95 masks but not PPE. To minimise aerosol generation, one end of an IV drip set was connected to the gas releasing valve of working port and the other end was dipped in a 5 litre jar containing chlorine solution. By this method, aerosol exposure to the attending OT staff was reduced.

**RESULTS****Table 1 : Table showing number of surgeries done in each month from March to October,2020**

Surgery	Number of cases									
	Total	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	
1 Laparoscopic Cystectomy	2					1		1		
2 Laparoscopic salpingectomy	2				1		1			
3 Laparoscopic salpingo-oophorectomy	1						1			
4 Laparoscopic myomectomy	1								1	
5 Total laparoscopic hysterectomy	22	3			4	2	3	7	3	
6 Laparoscopic tubal occlusion	8				2		4		2	
7 Diagnostic laparoscopy	4	1					1	1	1	
8 Hysteroscopic polypectomy	3	1					1		1	
9 Diagnostic hysteroscopy	3	1			1		1			
10. Hysteroscopic IUCD removal	5	3			1				1	
Total	51	9			9	3	12	9	9	

Table 1 shows the number of minimally invasive surgeries done in each month from March to October,2020. Total number of surgeries was 51 out of which 22 were total laparoscopic hysterectomy. Majority of surgeries were done in the month of August. None of the surgeons or operating team staff contracted covid during this period.

**DISCUSSION**

On March 15, 2020, the first case of covid 19 was diagnosed in Assam. Thereafter there was a steep rise of cases everyday and it peaked in

September. Admitting the patients in hospital one week prior to surgery ensures that the patient stays negative for SARS-CoV-2 by avoiding community transmission. It also allows time to do RTPCR and perform other routine pre-operative tests.

It can be observed using N95 masks, using the IV drip set connected to the gas releasing valve of working port with the other end dipped in chlorine solution and maintaining general covid protocol was sufficient to prevent getting infected.

A total of 51 cases were done, out of which majority was total laparoscopic hysterectomy and considerable number of cases were done during the month of September when the pandemic was at its peak in Assam. However, by judicious use of limited resources, the healthcare team could avoid getting infected.

An original research can also be designed to measure the validity and reliability of this paper.

### **CONCLUSION**

Though we have to be very cautious regarding the health and safety of surgeons, anaesthetists and operating team staff, undue curtailment of elective surgeries should not be done for fear of covid 19. Minimally invasive surgeries can be undertaken safely by judicious use of resources during the covid 19 era.

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### **REFERENCES :**

1. Zheng, M. H., Boni, L., & Fingerhut, A. (2020). Minimally invasive surgery and the novel coronavirus outbreak: lessons learned in China and Italy. *Annals of surgery*.
2. Ng, S. C., & Tilg, H. (2020). COVID-19 and the gastrointestinal tract: more than meets the eye Gut: first published as 10.1136/gutjnl-2020-321195 on 9 April 2020. *Gut Month*.
3. Harding, H., Broom, A., & Broom, J. (2020). Aerosol generating procedures and infective risk to healthcare workers: SARS-CoV-2-the limits of the evidence. *Journal of Hospital Infection*.