ASSOCIATION BETWEEN OBESITY AND PNEUMOPERITONEUM IN INITIAL TROCAR ACCESS FOR eTEP LAPAROSCOPIC HERNIA REPAIR

Dr. Vishakha Patil, Dr. Nitin Baste, SMBT IMSRC, NASHIK, INDIA

INTRODUCTION

- eTEP (Enhanced View Totally Extra-Peritoneal) is gaining popularity for minimally invasive hernia repair.
- During initial trocar insertion, inadvertent peritoneal breach may lead to pneumoperitoneum.
- Obesity may alter anatomical planes, increasing risk during access.

AIM

To evaluate whether **obesity is associated** with a higher risk of **pneumoperitoneum formation** during **initial trocar access** in eTEP laparoscopic hernia repair.

METHODS

- **Design**: Retrospective observational study.
- **Setting**: Single institute (SMBT, Nashik)
- **Duration**: 13 months.
- **Sample Size**: 102 patients.
- **Procedure**: All underwent eTEP repair.
- **Key Variable**: Incidence of pneumoperitoneum immediately after initial trocar insertion.
- **Groups**:
  - *Obese (BMI between >25 to >35) in 3 categories.*
  - *Non-obese (BMI <25)*

RESULTS

"Observed and Expected Frequencies of Pneumoperitonium by BMI Categories"

BMI Categories	Pneumoperitonium		$(O-E)^2/E$	No Pneumoperitonium		$(O-E)^2/E$	χ^2
	Observed	Expected		Observed	Expected		
<25	2	9.06	5.5	51	43.94	1.13	6.63
25-29.9	7	13.16	2.88	70	63.84	0.59	3.47
30-34.9	15	4.27	26.94	10	20.73	5.55	32.49
>35	3	0.51	12.07	0	2.49	2.49	14.56
Total	27	27		131	131		57.15

Since 57.15 is much greater than both critical values (7.815.)(11.345), we conclude that there is a statistically significant association between BMI categories and the occurrence of pneumoperitonium at both the 5% and 1% significance levels.

Pneumoperitoneum percentage according to BMI in our study

BMI	PNEUMOPERITONEUM	TOTAL IN STUDY	PERCENTAGE
<25	2	53	3.77%
25-29.9	7	77	9.09%
30-34.9	15	25	60%
>35	3	3	100%

CONCLUSION

- Our study findings indicate a **positive association** between obesity and the development of pneumoperitoneum during initial trocar access for eTEP hernia repair.
- Obesity emerges as a significant predictor of pneumoperitoneum formation during initial access for eTEP hernia repair, which can impact the overall difficulty and outcomes of the procedure.
- Surgeons performing laparoscopic hernia repair in obese patients should be aware of this positive correlation and take appropriate measures to mitigate associated risks.

DISCUSSION

- Obesity is a significant predictor of pneumoperitoneum during initial trocar access in eTEP.
- Surgeons must consider this when planning access routes in obese patients.
- Risk mitigation strategies (e.g., careful dissection, preoperative imaging) may improve outcomes.
- Tailor access technique for obese patients.
- Consider optical trocars and controlled entry methods.
- Awareness helps maintain the integrity of the eTEP plane.