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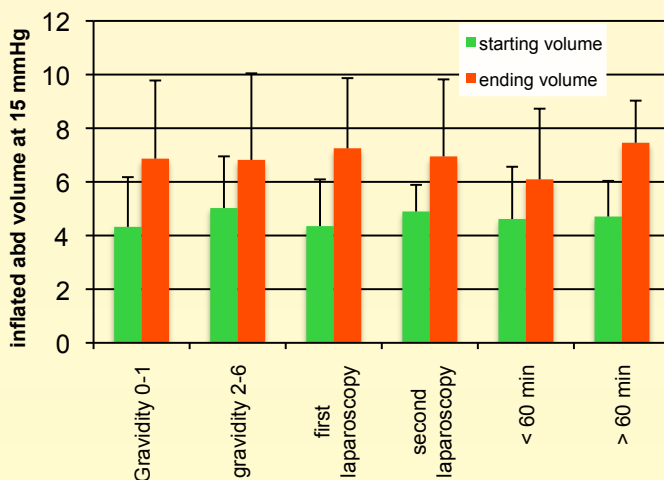
### Background and Goal of Study

insufflated volume increases at the end of surgery. (ref 1)

We found also that patients who had multiple pregnancies, laparoscopies or laparotomies had a larger abdominal compliance at the start of the pneumoperitoneum.

Our hypothesis is that a pneumoperitoneum changes the abdominal compliance more in long procedures and in patients who have never been pregnant, never had a laparoscopy or laparotomy. The increase in insufflated volume should be more.

### Inflated abdominal volume at starting and at ending laparoscopy



### Results

52 female patients were included in this study having primarily gynecologic or bariatric surgery procedures.

The abdominal elastance changed less if the patient had a previous laparotomy, laparoscopy, multiple gravidities or a very short pneumoperitoneum.

The inflated abdominal volume rose in all the other patients indicating a rise in abdominal compliance during pneumoperitoneum.

### Materials and Methods

Female patients scheduled for a laparoscopic procedure and who did give informed consent were included in this study.

The gravidity, previous laparotomies, laparoscopies and the length of the pneumoperitoneum was recorded. The abdominal pressure volume relation was measured with three data points (1) at the start and at the end of the pneumoperitoneum allowing the calculation of Elastance E and the inflated volume at 15 mmHg.

A multivariate analysis on the effect of time, gravidity, previous laparoscopy, laparotomy for the change in laparoscopic volume at 15 mmHg was performed.

	All patients	E	PV0
start		3,42 +/- 1,34	1,11 +/- 2,0
end		2,33 +/- 2,0	1,53 +/- 1,87

### Discussion

The results might indicate that previous abdominal wall overstretching is permanent. This group of patients had indeed a larger abdominal compliance at the start of a laparoscopy as previously described (2) with a smaller increase in insufflated volume at the end.

Less muscle relaxants could be given at the end of the laparoscopy

It is not clear if a lower pressure could lower this effect.

### Conclusion

The abdominal compliance increased ( E decreased) after laparoscopy but less if the patient had a previous laparotomy, laparoscopy, multiple gravidities or a short duration of pneumoperitoneum.

### References

- Mulier J. On the abdominal pressure volume relationship. ISIPUB 2009;21:1
- Mulier J, Dillemans B. Determinants of the abdominal pressure volume relation in non ACS patients. Acta Clinica Belgica 2007; 62.