Dear Editor,

Laparoscopic surgery becomes more popular and is replacing many types of open surgeries in gynecology, urology, and gastroenterology. The benefits of laparoscopic surgery are short recovery time, less pain, and bleeding complications and reduced scarring. Due to technological developments and its increasing usage, all laparoscopic surgery side effects should be known well. Pneumoperitoneum with carbon dioxide insufflation, which is mostly preferred, also needs special interests.

In their well-written manuscript Russo et al. reported that carbon dioxide insufflation resulted in an increase in left ventricular end systolic wall stress and left ventricular ejection time and a decrease in mean velocity of fiber shortening. These cardiac effects are shown to be reversible.

CO$_2$ pneumoperitoneum exerts multiple cardiovascular effects through hypercarbia (secondarily leading to acidosis), sympathetic stimulation (increasing both systemic vascular resistance and mean arterial pressure) and increased intraabdominal pressure (mechanically restricting lung functions, decreasing venous return). During cases of pronounced hypercarbia myocardial supression and direct vasodilation may occur. To take into account divergent mechanical and metabolic effects at different CO$_2$ pressures, serial blood CO$_2$ monitoring during surgery would render this study more precise.

In conclusion, CO$_2$ pneumoperitoneum have both mechanical and metabolic effects on cardiac contractile functions. When assessing cardiac effects of laparoscopic surgery metabolic effects of absorbed CO$_2$ on heart should be keep in mind.

Conflict of Interest
The Authors declare that they have no conflict of interests.

References

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