

Kanwal Bains¹, Thomas Wang², Marvin Ryou²

1. Department of Nutrition, Brigham and Women's Hospital, Harvard Medical School, Boston, MA. 2. Department of Gastroenterology, Brigham and Women's Hospital, Harvard Medical School, Boston, MA.

Background

- EUS-guided portal pressure gradient (PPG) measurement and EUS-guided liver biopsies are well-tolerated procedures under anesthesia, but it is unclear which anesthesia modality, monitored anesthesia care (MAC) or general anesthesia (GA), is superior for performing these cases.

Aim

- To describe our centers' experiences and approach to EUS-guided PPG and liver biopsy from an anesthesia perspective and compared the two anesthesia modalities in terms of procedure duration, efficacy, and safety.

Methods

- This was a retrospective review of all consecutive patients who underwent EUS-guided PPG measurement and/or liver biopsies at a single tertiary center between June 2021 and May 2022. All procedures were done with an anesthesiologist attending and/or a resident/nurse.
- After initial experience with GA, our center largely switched to MAC for these cases.
- Demographic data, scope time, anesthesia time, technical success rate, and adverse events post-procedure for each patient were noted.
- Statistical analysis was performed using student t-testing

Results

EUS guided PPG measurement (with liver biopsy)			
Mean (SD)	MAC (n=20)	GA (n=23)	p value
Procedure time (mins)	38.2 (14.2)	47.3 (14.5)	0.013
Anesthesia time (mins)	57.1 (14.9)	81.6 (14.9)	<0.001
EUS guided PPG measurement (without liver biopsy)			
Mean (SD)	MAC (n=13)	GA (n=17)	p value
Procedure time (mins)	37.7 (14.5)	46.9 (14.5)	0.011
Anesthesia time (mins)	58.1 (15.5)	81.9 (15.5)	<0.001
Intubation time with GA (mean (SD), mins) (n=23, with liver biopsy)			66.3 (14.6)
Intubation time in minutes with GA (mean (SD), mins) (n=17, without liver biopsy)			66.0 (15.3)

Technical success was 100% for all cases, and there was only one reported adverse event of a patient who reported transient shortness of breath post-extubation from GA who underwent EUS-PPG alone. This was resolved within a few hours with close monitoring. No adverse events were reported for patients who underwent MAC.

- We have a total of 73 patients who underwent EUS-guided PPG measurement and/or liver biopsy, with 30 (54%) having undergone only PPG measurement.
- The mean age was 51, with 56 (77%) female patients, and the mean BMI was 37. The clinical indication for most patients 60 (82%) undergoing the EUS procedure was for evaluation of underlying NAFLD/NASH. No differences in basic demographics were found between the MAC and GA cohorts.
- The mean scope time was higher for GA at 47 minutes on average, as compared to MAC at 38 minutes for both EUS-PPG with or without biopsies (p value of 0.013 and 0.011 respectively). Anesthesia time was significantly higher for GA overall (p<0.001).

Conclusions

MAC was superior in terms of procedure and anesthesia time when compared to GA for EUS-PPG cases. Both anesthesia modalities demonstrated excellent and comparable safety and efficacy.