Introduction: Median arcuate ligament syndrome (MALS) also referred to as celiac artery compression syndrome is characterized by postprandial abdominal pain, weight loss, and vomiting. Impingement on the celiac artery and nerve may occur if the median arcuate ligament runs anterior rather than superior to these structures. Symptoms resultant from decreased blood flow of the celiac artery and compression of the celiac ganglia improve via releasing the ligament via open, laparoscopic, or robotic technique [1]. This is the first report of anesthetic management of patients for MALS surgery.

Recent reports indicate a strong association between postural orthostatic tachycardia syndrome (POTS) and MALS. The GI symptoms of POTS patients with celiac artery compression may be palliated in a significant portion of these patients via ligament release [2]. With POTS affecting between 500,000 and 1 million in the United States, it is reasonable to expect an increase in MALS surgery in the segment of the POTS population that has documented moderate to severe celiac artery compression via imaging. Accordingly the anesthetic plan must take into consideration factors that may trigger dysautonomia.

Results: As of November 2016, one hundred and forty-five patients (n=145) have undergone MALS surgery at Children’s National. To mitigate intraoperative autonomic dysfunction, hypotension, and hemodynamic lability, patients who are on alpha-1 agonists are instructed to continue taking perioperatively. Additionally, it is now institutional standard for patients to receive preoperative intravenous hydration. Secondary to the low rate of intraoperative complications (less than 1%) no invasive monitoring is needed. Postoperatively conversion from IV to PO analgesics has been a rate limiting step to discharge in a subset of patients.

Discussion: While the median arcuate ligament release has been performed by pediatric surgeons for the past decade, there are no reports of the anesthetic implications. Given the strong association between MALS and POTS it is recommended that all patients presenting for this procedure receive an anesthetic that mitigates the potential effects of autonomic dysfunction. Additionally while the incidence of bleeding remains low amongst surgeons experienced in performing median arcuate ligament release, anesthesiologists should recognize that the procedure is performed in close proximity to major vascular structures (aorta, celiac axis). Finally while the expected postoperative pain level should be equivalent to other laparoscopic operations, patient’s on chronic opioid therapy preoperative consultation of the pain medicine specialists should be considered to develop a plan in conjunction with the patient and surgeons for postoperative and discharge planning and expectation management.

References