



# A case presentation of Median Arcuate Ligament Syndrome.

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## Background

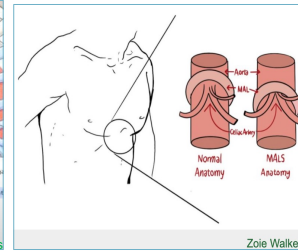
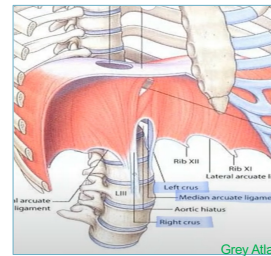
- Median Arcuate Ligament Syndrome (MALS) is also known as Celiac Axis Syndrome, Harjola-Marable Syndrome or Dunbar Syndrome.
- It is seen in women within the ages of 30 to 50 as well as patients with a slender body physique.
- There is an increasing prevalence of this disorder in the pediatric population with females being more affected than males, especially in pubertal and post pubertal adolescents.

## Objectives

- To provide awareness on this rare clinical condition.
- To assess the different interventions for management of the disease.

## Pathophysiology

- MALS is due to the compression of the celiac artery by the median arcuate ligament resulting in signs and symptoms of foregut ischemia.
- It is characterized by postprandial abdominal pain, weight loss, and occasional abdominal bruit.
- Individuals affected with this condition have a characteristic J shape or hooked appearance that is due to the narrowing of the proximal celiac axis.

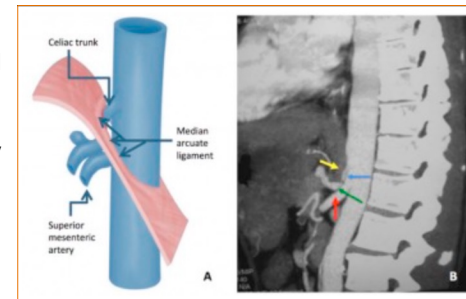


## Patient Presentation

- 40-year-old Caucasian Female
- She presented with complaints of epigastric abdominal pain, nausea, vomiting x4 episodes.
- She admits to having long term fatigue, generalized weakness, decreased appetite, and 60 lbs. unintentional weight loss in the past year.
- No hematemesis or melena noted.
- Vital signs was remarkable for bradycardia at 38 bpm.
- CT Angio Chest/Abdomen/Pelvis showed severe stenosis of the proximal celiac axis with hooklike appearance.
- Duplex US of mesenteric arteries revealed elevated peak systolic velocity of the celiac artery up to 386 cm/s and 2 times greater than the abdominal aorta peak systolic velocity.



RadioGraphics. Horton KM.



Y. Akcali; R. Atabey

## Discussion

- Based on current studies, symptom relief can be achieved with a variety of surgical interventions including celiac ganglionectomy, open, laparoscopic, or robotic intervention.
- Laparoscopic approach is preferred over the open surgical intervention due to multiple benefits. This includes reduced pain and postoperative morbidity such as ileus, blood loss, and adhesive bowel obstruction.
- Patient was stabilized and discharged with general surgery follow up for an outpatient laparoscopic surgical decompression. She was also discharged with Zofran (Ondansetron) for nausea control and Mirtazapine for appetite and weight gain.

## References

1. Kim E.N., Lamb K., Reles D., Moudgil N., Dimuzio P.J., Eisenberg J.A.: Median arcuate ligament syndrome—review of this rare disease. *JAMA Surg* 2016; 151: pp. 471-477.
2. Scholbach T. (2006). Celiac artery compression syndrome in children, adolescents, and young adults: clinical and color duplex sonographic features in a series of 59 cases. *Journal of ultrasound in medicine : official journal of the American Institute of Ultrasound in Medicine*, 25(3), 298-305. <https://doi.org/10.7863/jum.2006.25.3.298>
3. Goodall, R., Langridge, B., Onida, S., Ellis, M., Lane, T., & Davies, A. H. (2020). Median arcuate ligament syndrome. *Journal of vascular surgery*, 71(6), 2170-2176. <https://doi.org/10.1016/j.jvs.2019.11.012>
4. Horton, Karen M., et al. "Median Arcuate Ligament Syndrome: Evaluation with CT Angiography." *RadioGraphics*, vol. 25, no. 5, 1 Sept. 2005, pp. 1177-1182. <https://doi.org/10.1196/radiol.2005.05051177>
5. Akcali, Yigit, and Rukiye Atabey. "Dunbar Syndrome: A Rare Cause of Angina Abdominis." *The American Journal of Cardiology*, vol. 121, no. 8, 15 Apr. 2018. <https://doi.org/10.1016/j.amjcard.2018.03.311>
6. Tulloch AW, Jimenez JC, Lawrence PF, Dutton EP, Moore WS, Rigberg DA, Denurberts BG, Quinones-Baldrich WJ. Laparoscopic versus open celiac ganglionectomy in patients with median arcuate ligament syndrome. *J Vasc Surg*. 2010 Nov;52(5):1283-9. doi: 10.1016/j.jvs.2010.05.083. Epub 2010 Jul 13. PMID: 20630683.
7. Jimenez JC, Harlander-Locke M, Dutton EP. Open and laparoscopic treatment of median arcuate ligament syndrome. *J Vasc Surg*. 2012 Sep;56(3):869-73. doi: 10.1016/j.jvs.2012.04.057. Epub 2012 Jun 27. PMID: 22743019.
8. Sun Z, Zhang D, Xu G, Zhang N. Laparoscopic treatment of median arcuate ligament syndrome. *Intractable Rare Dis Res*. 2019 May;8(2):108-112. doi: 10.5582/irdr.2019.01031. PMID: 31218180; PMCID: PMC6557235.
9. Fernstrum C, Pryor M, Wright GP, Wolf AM. Robotic Surgery for Median Arcuate Ligament Syndrome. *JLSLS*. 2020 Apr-Jun;24(2):e2020.00014. doi: 10.4293/JLSLS.2020.00014. PMID: 32518479; PMCID: PMC7242022.