

## A rare case of celiac artery compression syndrome

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### Abstract

It is uncommon for children to have celiac artery compression syndrome. We describe a case of celiac artery compression syndrome in a young child who initially reported to us with severe recurrent epigastric pain abdomen and nausea. Historical evidence of rapid weight loss over 15 days. When the child's symptoms persisted despite symptomatic treatment, comprehensive testing revealed that the child had celiac artery compression syndrome. In this report, we emphasize the significance of taking celiac artery compression syndrome into account as one of the differential diagnoses for acute severe epigastric pain that is unresponsive to standard gastritis treatment and when all investigations for pancreatitis, ureteric obstruction, and renal colic are normal.

**Keywords:** MALS (Median Arcuate Ligament Syndrome); Celiac artery compression syndrome; Case; Children

### 1. Introduction

One of the rarest and most severe causes of recurring stomach discomfort in children is celiac artery compression syndrome. It can resemble acute severe pancreatitis or acute severe gastritis. As the name implies, it results from compression of the celiac artery as a result of the median arcuate ligament's impediment. In this case study, we describe a case of celiac artery compression syndrome that mirrored both acute gastritis and pancreatitis.

### 2. Case Report

We were referred a 9-year-old child who was experiencing severe nausea and epigastric pain. His systemic examination revealed epigastric discomfort, which was disrupting his everyday activities, and his vital signs were steady at the time of the assessment. Episodes of pain were occurring, unrelated to food intake, and there was no varying pain over the day. The results of additional systemic examinations were normal. As serum amylase and lipase levels were within normal ranges according to blood investigation data. Even routine ultrasounds and CT scans of the abdomen were normal. The diagnosis of celiac artery compression syndrome was confirmed by a USG- Doppler of the child, while the child continued to experience excruciating abdominal pain and nausea. He underwent laparoscopic surgery to loosen the restricting ligament, after which the child was free from pain.

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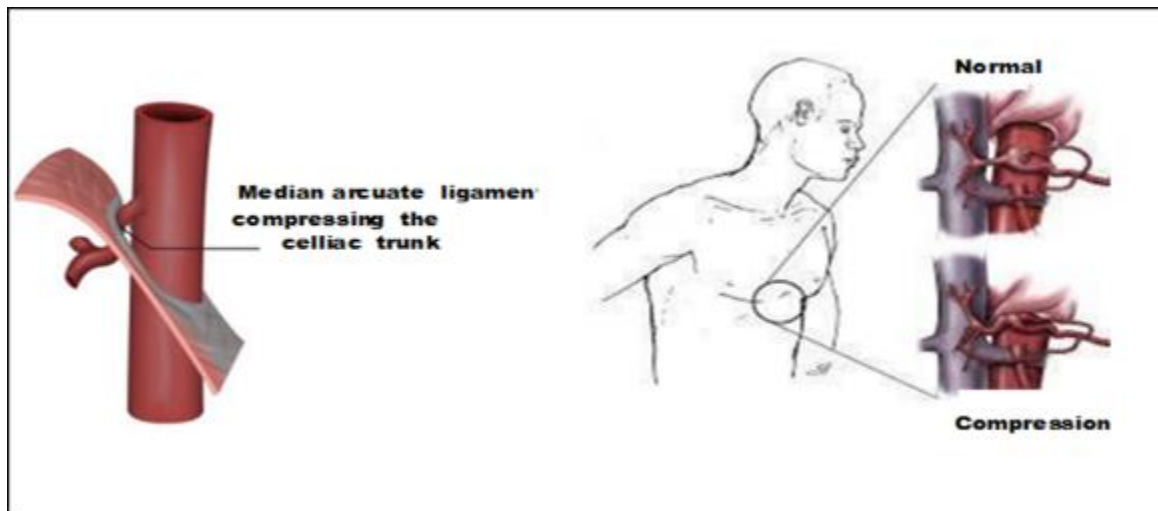


Figure 1 Details of ligament compressing –celiac trunk

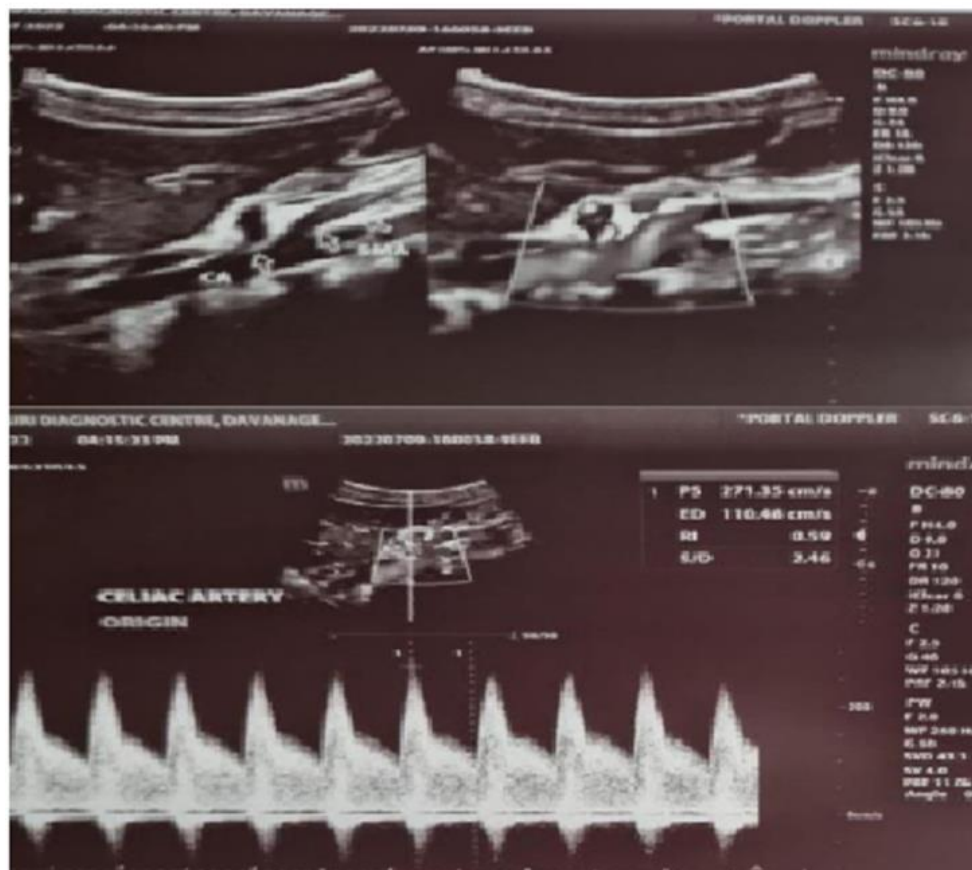


Figure 2 Doppler Effect showing study intervention

### 3. Discussion

One of the uncommon causes of recurrent severe stomach discomfort in children is celiac artery compression syndrome. Other names for it include Median Arcuate Ligament Syndrome (MALS) and Dunbar Syndrome. It is an uncommon midline condition brought on by the diaphragm's fibrous band known as the median arcuate ligament compressing the celiac artery. In 1917, Lipshutz published the first account of arterial anatomical compression. Harolja was the first to

identify median arcuate ligament syndrome as a clinical condition in 1963. In 1965, Dunbar wrote about the first clinical investigation on this issue.

### 3.1. Etiology

The cause of celiac artery compression syndrome's etiology is unknown. Uncertainty stems from the fact that asymptomatic patients can also exhibit anatomic compression of the celiac artery by the median arcuate ligament. To put it another way, none of the patients with this anatomic compression experience symptoms. The median arcuate ligament, which connects the two medial margins of the diaphragmatic crura, is typically located close to the first lumbar or the 12<sup>th</sup> thoracic vertebra. Two anatomical circumstances can result in celiac artery compression.

- A celiac artery with an unusually cephalad origin.
- A caudal diaphragm insertion that is aberrant.

The placement of the diaphragm or the source of the celiac artery can both be affected by congenital causes. Due to the rarity of the illness in our instance, it was not taken into account during the early management phase. Because the results of all the studies were normal and the youngster was still in agony, this was assumed. In addition to surgical line of management, this has a medical line of management in an acute state that includes gastrointestinal decompression, correction of electrolyte imbalances, and nutritional support.

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## 4. Conclusion

Celiac artery compression syndrome should be kept in mind as a possible differential diagnosis if persistent abdominal pain remains after the most prevalent explanations have been eliminated.

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## Compliance with ethical standards

### *Acknowledgments*

The author acknowledges the institution for providing all the necessary infrastructure and atmosphere for the creation of the case study.

### *Disclosure of conflict of interest*

There is no conflict of interest between the funding agency and the institution; this study was simply undertaken on an observational basis.

### *Statement of ethical approval*

Permission was obtained

### *Statement of informed consent*

Patients' permission was acquired from parents and caregivers.

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