

日本人の正中弓状靭帯圧迫症候群の検出率 ～ 223 名の超音波スクリーニング検査からの考察～

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抄 録

目的：腹部超音波スクリーニング検査時に腹腔動脈（celiac artery：以下，CA）の観察を行い，日本人の正中弓状靭帯圧迫症候群（Median Arcuate Ligament Syndrome：以下，MALS）の検出率を明らかにすること。**対象と方法**：2022年1月から2023年2月の間に，当院で1名の検査技師が施行した腹部超音波検査532名のうち，検査目的がMALSの疑い，健診目的，日本人以外を除いた223名を対象とした。下記の方法でMALSのスクリーニング検査を行った。①心窩部縦走査，安静呼吸時におけるCAの走行方向と血管径を確認する。頭側へのCA軸の顕著な変位または血管径の狭小化が認められた場合，MALSの可能性を考慮し，CAの詳細な観察を行う。②CAの狭窄・乱流の有無，狭窄部の吸気時・呼気時の血管径・収縮期最大血流速度（peak systolic velocity：以下，PSV）を計測する。③呼吸によるCA軸の変化・狭窄・乱流を認め，乱流部のPSVが200 cm/s以上，もしくは吸気時と呼気時のPSVに50 cm/s以上の差を認める場合，MALS疑いと判定する。**結果と考察**：223名中11名（4.9%）にMALSが疑われた。11名中7名に腹部造影CT検査が追加され，7例ともMALSと診断された（3.1%）。腹部症状の強い4名（1.3%）に手術が行われ，全例に症状の改善が得られた。CAの詳細観察に必要な時間は 6.8 ± 1.2 分であった。**結論**：本検討においてMALSの検出率は3.1%と高率であった。MALSは腹痛や内臓動脈瘤の原因となるが，手術により症状の改善が期待できる。超音波検査によるMALSの診断精度は高く，MALSの可能性も考慮し，CAの詳細な観察を行うべきである。

Detection Rate of Median Arcuate Ligament Syndrome in Japanese Population: Insights from Ultrasound Screening of 223 Individuals

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Abstract

Purpose: This study aimed to assess the prevalence of median arcuate ligament syndrome (MALS) in the Japanese population by observing the celiac artery (CA) during abdominal ultrasound screenings. **Subjects and Methods**: Between January 2022 and February 2023, 532 abdominal ultrasound examinations were performed by a single sonographer at our institution. Of the 532 individuals screened, 223 Japanese patients were selected, excluding those whose examination purpose was suspicion of MALS, health check-ups, or non-Japanese individuals. The screening for MALS included: (1) observing the direction and diameter of the CA during rest expiration in a longitudinal epigastric scan, with a significant displacement of the CA axis towards the head or narrowing of the vessel being considered indicative of MALS; (2) checking for CA narrowing and turbulence, and measuring the vessel diameter and peak systolic velocity (PSV) during inhalation and exhalation at the narrowed part; and (3) if respiratory-induced changes in the CA axis, stenosis, or turbulence were noted, and if the PSV in the turbulent area exceeded 200 cm/s, or if there was a difference of more than 50 cm/s in PSV between inhalation and exhalation, MALS was suspected. **Results and Discussion**: MALS was suspected in 11 out of 223 individuals (4.9%). Among these, seven underwent a detailed examination with abdominal contrast-enhanced CT, and all were diagnosed with MALS (3.1%). Four patients with severe abdominal symptoms (1.3%) underwent surgery, resulting in symptom improvement for all. The average time for detailed CA observation was 6.8 ± 1.2 minutes. **Conclusion**: The detection rate of MALS in this study was found to be 3.1%. MALS can cause abdominal pain and visceral artery aneurysm, but surgery can improve symptoms. The diagnostic accuracy of ultrasound for MALS is high. Therefore, it is advisable to perform a detailed observation of CA, taking into account the possibility of MALS.

Keywords

median arcuate ligament syndrome, MALS, celiac artery compression syndrome, CACS, ultrasonography

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