IJMSRI
International Journal of Medical Science Research and Innovations
Volume 2 Special Issue 1 (Feb) 2025, Article 14 (pp.34-37)
ISSN-3048-9067

Original Investigation | Neurology

Aneurysm in Disguise: Case study of a Distal Superior Division MCA Aneurysm mimicking a left Temporal Space-Occupying lesion in a 36-Year-old Female

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Key Points

Question:
How can a distal superior division MCA aneurysm mimic a space-occupying lesion?
What are the diagnostic challenges in identifying rare distal MCA aneurysms?
What is the role of endovascular treatment in managing such aneurysms?

Findings:
A 36-year-old female with a persistent headache was initially diagnosed with a left temporal SOL.
DSA revealed a dissecting aneurysm in the distal superior MCA division (10.1 mm × 8.1 mm).
Managed successfully with endovascular parent vessel occlusion using coils and glue.

Meaning:
Advanced imaging, especially DSA, is critical for accurate identification. Endovascular intervention, combined with a multidisciplinary approach, ensures optimal outcomes.

Abstract

Importance:
The majority of MCA aneurysms, estimated to be between 80% and 95%, occur at the bifurcation of the M1segment. In contrast, aneurysms located in the distal MCA region involving the M3 and M4 segments are relatively uncommon. The atypical location coupled with their unique pathology make its diagnosis difficult. In this case, the aneurysm manifested as a space-occupying lesion (SOL) in the left temporal lobe, stating the importance of recognizing such atypical presentations to avoid misdiagnosis and inappropriate treatment in
future.

Objective:
To document the diagnostic challenges of a dissecting MCA aneurysm presenting in the distal superior division using DSA and other imaging modalities accompanied by images. This study aims to provide insights into the treatment options for a rare dissecting aneurysm in the distal MCA, including the use of parent vessel occlusion with coils and glue.
To highlight the multidisciplinary approach used for the management of the distal MCA Aneurysm.

Evidence Review:
A systematic search of PubMed and google scholar for studies such as randomized control trials, reviews and systematic reviews published in the past 5 years. Key words used are AD, gut microbiota, nanotechnology in AD were used.

Design:
A case report of a 36-year-old female presenting with a common clinical symptom of a persistent headache initially diagnosed as a space occupying lesion (SOL) in left temporal lobe, her diagnostic workup into dissecting distal MCA aneurysm, imaging techniques, and approach to endovascular treatment.

Setting:
This study was conducted in the neurosurgical department of a tertiary care centre at ESIC Medical College and Hospital, Faridabad, Haryana, India, revealing the interprofessional efforts across various departments of neurosurgery, radiology, and critical care.

Participants:
A 36-year-old female patient who presented with a persistent headache and neck pain, with imaging initially suggestive of a left temporal SOL.

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Intervention:
The patient was subjected to Digital Subtraction Angiography (DSA), which revealed a dissecting aneurysm of the distal superior division of the MCA. After confirmation of diagnosis, the patients was operated by an endovascular method: parent vessel occlusion with coils and glue.

Main Outcome and Measures:
Prevention of misdiagnosis through DSA and other imaging modalities in case of aneurysms with vague presentations and successful management by endovascular parent artery occlusion, without any signs of early neurological deficit.

Results:
DSA confirmed the presence of a dissecting aneurysm in the distal superior MCA division, measuring 10.1 mm x 8.1 mm. This aneurysm was located near the Sylvian fissure and was managed endovascularly with parent vessel occlusion. The patient showed no complications and was discharged in stable condition.

Conclusion and Relevance:
This case highlights the diagnostic challenges associated with rare distal dissecting MCA aneurysms, especially when they mimic space-occupying lesions. Advanced imaging, especially DSA, played a vital role in correctly identifying the aneurysm. The use of endovascular techniques, along with a interprofessional approach, can be effective in managing such complex aneurysms, thereby enhancing clinical outcomes and providing valuable insights for future cases.

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Volume 2 Issue 1 (Feb) 2025, Article 14 (pp.34-37)
ISSN-3048-9067

Article Information

Accepted for Publication: December 24-2024
Published: February 13-2025.

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Acknowledgment: - MedVentures (CPD no.-#784331) for providing financial support for Publishing, Alte University.