

# A RARE CASE OF CALCIUM CHANNEL BLOCKER INDUCED ANGIOEDEMA

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## Background

Life threatening angioedema can be caused by angiotensin converting enzyme inhibitors (ACE), angiotensin receptor blockers (ARB), dihydropyridine calcium channel blockers (CCB) or due to complement deficiencies. Here we discuss a rare case of angioedema in a patient on dihydropyridine calcium channel blockers (Amlodipine).

## Case Report

A 66-year-old African American female with past medical history of hypertension, asthma, chronic dry cough, ventral hernia presented with complains of swelling of the tongue that started 12 hours before presentation to the emergency room. The swelling gradually progressed in few hours to an extent where she had difficulty in speaking. She was diagnosed with hypertension five years ago and was prescribed a CCB. During the past 5 years she also had dry cough, few episodes of tongue swelling with spontaneous remission and developed ventral hernia. The doses of the blood pressure drug were not changed recently. She has had a similar episode of tongue swelling in the past which resolved by itself.

## Vitals

Her vitals were heart rate 93 bpm, oxygen saturation 97 percentage, respiratory rate 18, BP-132/76 mmHg.

## Labs/Imaging/Progress

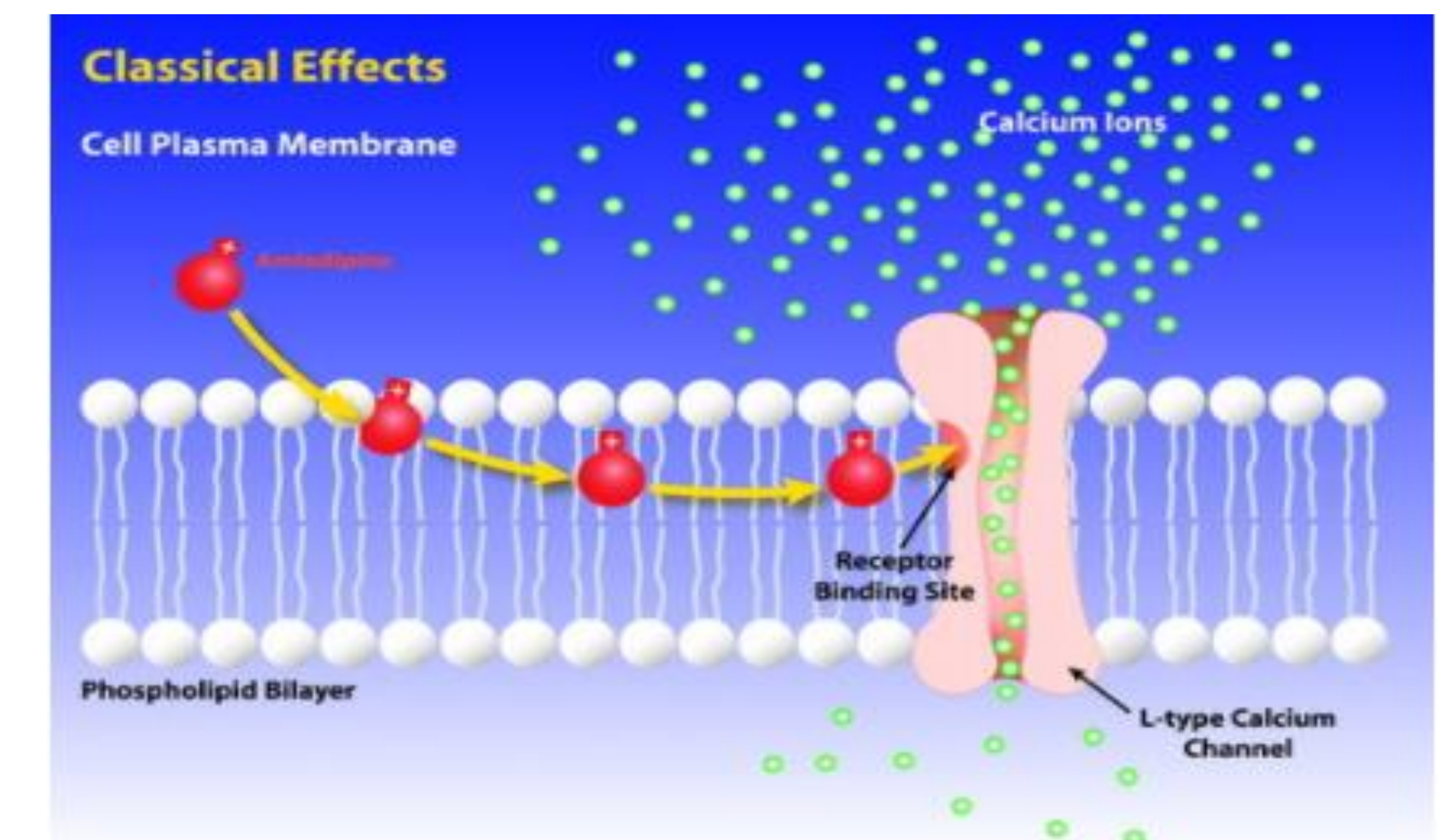
- Her labs including CBC, CMP, C4 were with in normal range. She was admitted for close monitoring. CCB was stopped after admission. She received prednisolone, diphenhydramine and fresh frozen plasma. Her swelling resolved gradually over the next 2 days and she was discharged to home discontinuing Amlodipine. She was started on Metoprolol for her blood pressure management and told that she should always mention that she is allergic to the drug.

## References

1. Kuruvilla ME, Sanan N. Amlodipine-induced angioedema: An unusual complication of a common medication. *Allergy Rhinol (Providence)*. 2018;9:2152656718764139. Published 2018 Apr 6. doi:10.1177/2152656718764139
2. Southward J, Irvine E, Rabinovich M. Probable amlodipineinduced angioedema. *Ann Pharmacother*. 2009; 43:772–776.
3. Mason RP, Marche P, Hintze TH. Novel vascular biology of third-generation L type calcium channel antagonists: Ancillary actions of amlodipine. *Arterioscler Thromb Vasc Biol*. 2003; 23:2155–2163

## Discussion

- ACE and CCB are known to cause life threatening airway compromise from angioedema. CCB induced angioedema is rare, but it can cause periorbital and lip angioedema. There are 2 groups of CCBs (DHP and non-DHP); Diltiazem (non-DHP) has the greatest potential to induce hypersensitivity reactions. The pathophysiologic mechanism of DHP-induced angioedema has not been established. In addition to arteriolar vasodilatation and increased vascular permeability, a role for bradykinin and vascular nitrous oxide production has been postulated.



## Conclusion

- DHP induced reactions may vary in severity and may cause life threatening airway compromise. Clinicians should use clinical decision-making pathways to identify the cause and withdraw the suspected agent and should immediately start appropriate treatment measures based on pathophysiology of the inducing agent.