

Internal Carotid Artery Dissection In A Pregnancy Complicated By Fulminating Pre-Eclampsia.

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BACKGROUND

The risk of acute cerebrovascular disease in pregnancies complicated by pre-eclampsia is 1 in 500¹. While there is a well-determined association between spontaneous coronary artery dissection and pre-eclampsia, it is not known whether pre-eclampsia increases the risk of carotid artery dissection². Vertebral artery dissection associated with pre-eclampsia has been reported³.

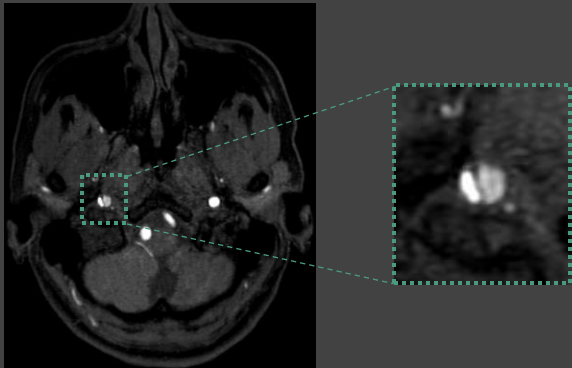


Figure 1: MR angiogram of CL showing dissection of the extra-cranial right internal carotid artery with false lumen.

CASE

CL is a 38 year old nulliparous female who was diagnosed with pre-eclampsia at 33 weeks gestation, on a background of essential hypertension and gestational insulin-dependent diabetes mellitus. Her condition deteriorated with fulminating pre-eclampsia associated with intrauterine growth restriction, so she underwent emergency caesarean section at 34+2 weeks gestation. She delivered a healthy live male infant who was admitted to the Nursery due to prematurity. CL was admitted to Intensive Care for invasive blood pressure monitoring and magnesium sulphate. Her hypertension stabilised day 3 post-delivery, and she was discharged home on day 5 on three anti-hypertensives.

She presented to Emergency later that same day with acute onset of pleuritic chest pain associated with severe headache and uncontrolled hypertension. CT pulmonary angiogram ruled out pulmonary embolism, but MR angiogram showed a 3cm dissection of the extra-cranial right internal carotid artery (Figure 1). The pattern of disease on imaging was suspicious for fibromuscular dysplasia, but this was ruled out by renal vascular ultrasound. She was admitted to Intensive Care for blood pressure control and anticoagulation. There was no evidence of cerebral infarction. She was discharged home 9 days later on therapeutic anticoagulation.

DISCUSSION

Pre-eclampsia is a multisystem disorder characterised by vascular dysfunction. Possible mechanisms for causing carotid artery dissection include impaired cerebral autoregulation, hypercoagulability, and inflammation, as well as increased carotid intima-media thickness over the long-term³. Further research is needed to determine if there is an association between pre-eclampsia and carotid artery dissection.

REFERENCES

1. Miller EC, Gatollari HJ, Too G, Boehme AK, Leffert L, Marshall RS, Elkind MSV, Willey JZ. Risk factors for pregnancy-associated stroke in women with preeclampsia. *Stroke*, 2017; 48:1752-1759.
2. Tweet MS, Hayes SN, Codosi E, Gulati R, Rose CH, Best PJM. Spontaneous coronary artery dissection associated with pregnancy. *J Am Coll Cardiol*, 2017; 70:426-435.
3. Miller EC. Preeclampsia and cerebrovascular disease: the maternal brain at risk. *Hypertension*, 2019; 74:5-13.

