

Henry Ford Health System

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### Oh No! PFO!

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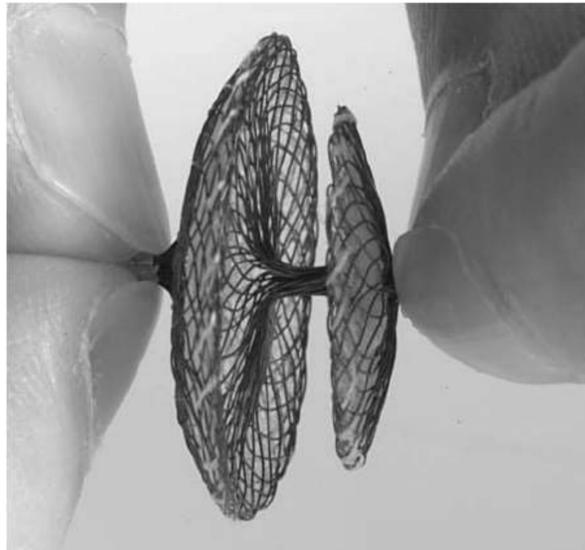
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## INTRODUCTION

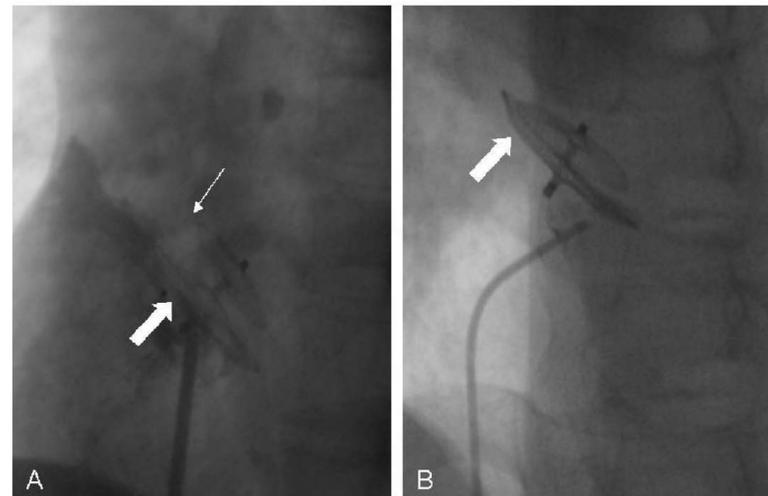
- Patent foramen ovale (PFO) is a congenital cardiac lesion with a prevalence of 25% in adult population
- PFO allows passage of oxygenated blood from right to the left atrium during fetal development
- It usually closes by age of two
- Majority of individuals with PFO are asymptomatic
- Some manifestations include cryptogenic stroke, platypnea and migraine

## CASE

- We present an 80 year old female with history of cryptogenic stroke and multiple sclerosis who presented with shortness of breath and lightheadedness for one week
- She had a back surgery two weeks prior to presentation for spine compression fracture
- On presentation, the patient was hypoxic and hypotensive
- Computed tomography pulmonary angiogram was positive for bilateral pulmonary emboli (PE) with right ventricular strain
- The patient underwent emergent thrombectomy, despite that she remained hypoxic
- She was found to have right to left atrial shunt
- Transesophageal echocardiogram with bubble study showed a large PFO with tunnel diameter of 0.54cm
- Lower extremity Doppler ultrasound was positive for deep venous thrombosis (DVT)
- Patient then had successful closure of PFO with an Amplatzer PFO Occluder (Figure 1 and 2) and her hypoxia completely resolved



**Figure 1:** Amplatzer PFO Occluder



**Figure 2:** Fluoroscopy images of PFO occluder device insertion

## DISCUSSION

- Up to 40% of patient with cryptogenic stroke have a PFO
- PFO closure should be done to prevent strokes in the future
- Patients who present with PE and have persistent hypoxia despite thrombectomy should have further investigation to rule out shunting
- PFO should be closed in patients with history of stroke
- PFO closure should be considered in those with confirmed DVTs because they are at risk of stroke from clot propagation

## CONCLUSION

- Understand that persistent hypoxia despite thrombectomy in acute PE could be due to right to left shunting through PFO

## REFERENCES

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2. Wu LA, Malouf JF, Dearani JA, et al. Patent foramen ovale in cryptogenic stroke: current understanding and management options. *Arch Intern Med* 2004; 164:950