

# mystery of atrial septal defect .....



By  
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## ❖ Clinical presentation;.....

- A 27-years old male was complaining from hypoxemic dyspnea.
- Dyspnea was aggravated while sitting or standing and relieved while in supine position
- He had recurrent chest infection & intermittent dyspnea on exertion since childhood

- His blood pressure was 110/70 mm Hg, pulse rate was 85 beats per minute.
- Multiple clicks & a grade II systolic murmur was heard on the left sternal border.
- The electrocardiogram (ECG): sinus rhythm and non-specific RSr' pattern in V 1

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- The pulse oximetry showed a saturation of 94% in a supine position, but this declined to 75% rapidly after standing.

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## @ Systemic review revealed.....

- No significant findings, only he had several attacks of migraine
- He did not smoke cigarettes.
- No specific past medical history
- Irrelevant family history.

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## @ Clinically...



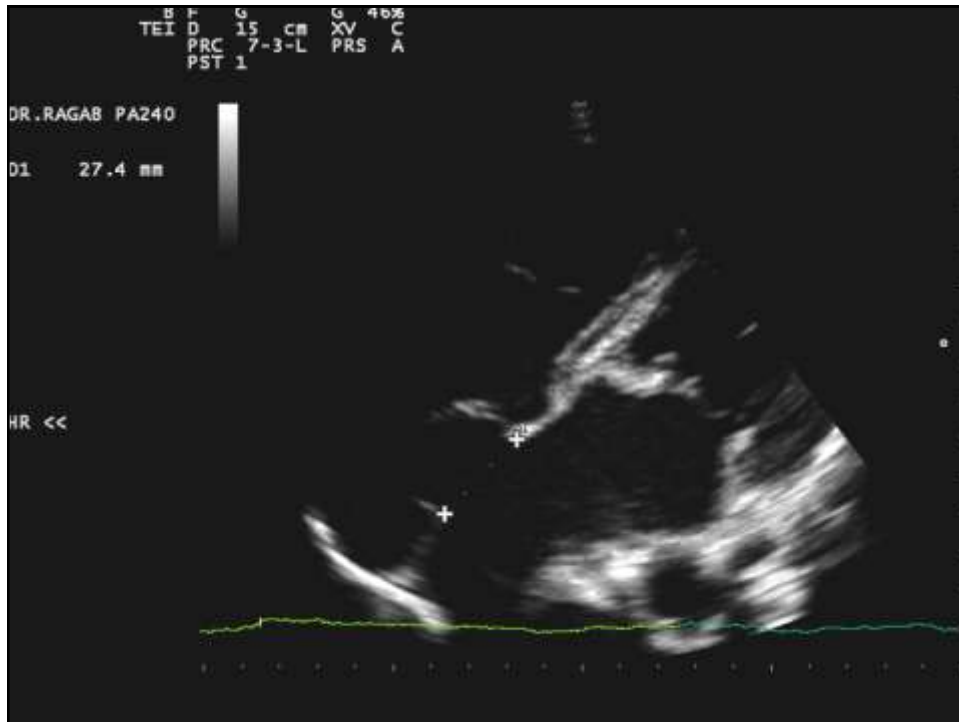
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## Transthoracic echocardiography

- ⊙ A TTE showed an 27 mm sized ASD with a right-side volume overload and a left-to-right shunt through ASD
- ⊙ A septal aneurysm was seen (22 mm)
- ⊙ Mild tricuspid regurgitation with peak PG of 32 mm Hg

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## 🌐 Transesophageal Echo...

- ⊙ A 35 mm-sized ASD.
- ⊙ Hypermobile aneurysm with 27mm in diameter
- ⊙ *Two color jets across the inter-atrial septum:* one was close to the aortic rim and the other close to the posterior rim

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## ➔ Approaches.....

- Ⓢ Surgical approach is the best; But the patient refused
- Ⓢ Percutaneous intervention: all interventionists refused
- Ⓢ ???

# Modified to be Deviced

By

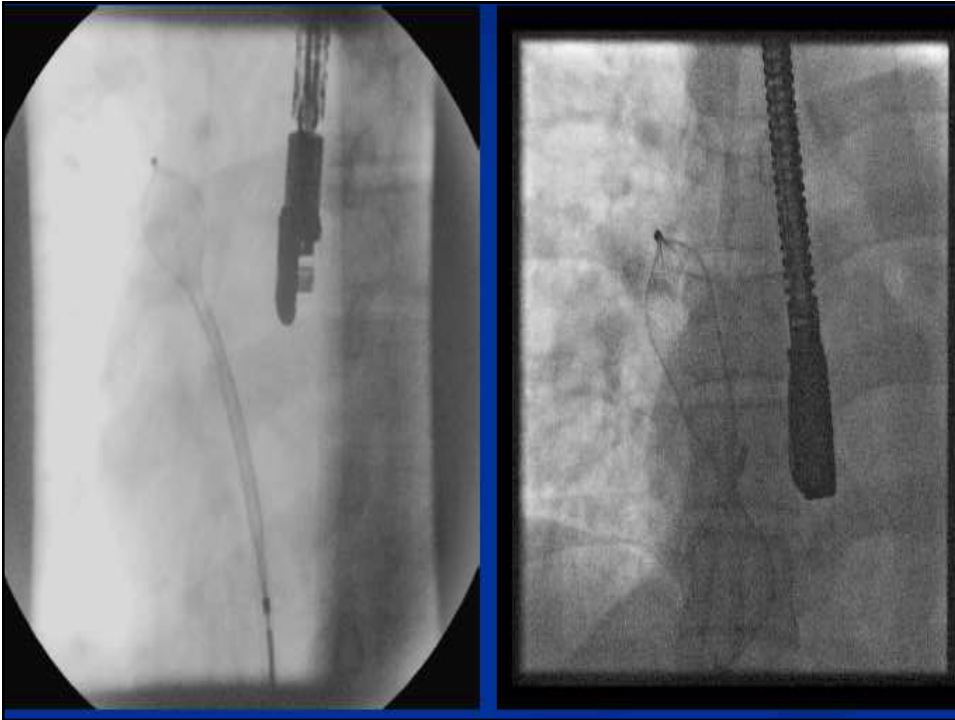
our congenital team under supervision  
of our leader

Professor **Ragab A. Mahfouz, MD**

## @ Our Approach.....

- ☀ Mid-aneurysmal septostomy
- ☀ Right upper PV technique.
- ☀ Locked system- clockwise rotation





- ➡ Lock the valve and the whole system (device + cable + delivery sheath) → Clockwise or (posterior) rotation → good orientation

Back to.....



→ **Platypnea - orthodeoxia syndrome**

- ▣ Platypnea-orthodeoxia syndrome is an under-diagnosed condition characterized by dyspnea and deoxygenation when changing from a recumbent to an upright position
- ▣ It is usually caused by increased right-to-left shunting of blood on assuming an upright position, with normal pressure in the right atrium

**Why hypoxemia, in spite of nearly no pulmonary or mild PH?**

→ Simply due to the anatomic redirection of blood by abnormal anatomically large Eustachian's valve

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### 3- Classification of IAS aneurysms (Olivares-Beyes and colleagues).

**Type 1:** right (R) if the bulging is in the RA only.

**Type 2:** left (L) if the bulging is in the LA only

**Type 3:** RL if the major excursion bulges to the RA and the lesser excursion bulges toward the LA.

**Type 4:** LR if the maximal excursion is toward the LA with a lesser excursion toward the RA

**Type 5:** Atrial septal aneurysm movement is bidirectional and equidistant to both atria during the cardiorespiratory cycle.

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## Accordingly.....

- © We categorized the patient as having a complicated type 5 atrial septal aneurysm (bi-directional and equidistant to the right as well as to the left , fenestrated with left to right shunt)

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## @The message.....

1. Platypnea - orthodeoxia syndrome be considered in the differential diagnosis in patients with unexplained dyspnea & hypoxemia.
2. Global approach to the patients.
3. No thing is impossible; if you think physiologically & anatomically.

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