Case Report

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NSTEMI – 7 YEARS After Iatrogenic Aortic Dissection

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Definition

Iatrogenic aortic dissection during PCI is a rare but potentially life-threatening complication that occurs when a tear in the aortic intima or coronary ostium develops during coronary angioplasty. The dissection can extend retrogradely or antegradely into the ascending aorta or the coronary artery itself. It is usually caused by trauma from the catheter, guidewire, balloon, or contrast injection, leading to separation of the vessel wall layers and creation of a "false lumen" that can compromise blood flow. The estimated incidence ≈ 0.01 % across all PCI procedures, in chronic total occlusion (CTO) PCI –around 0.83 %, most cases involve the right coronary artery (~ 76–77 %)

Classification

- **Class 1:** Dissection limited to coronary cusp or ostium.
- **Class 2:** Extension < 40 mm into the ascending aorta.
- **Class 3:** Extension > 40 mm into the ascending aorta. This classification guides treatment strategy.

Case Presentation

7 Years ago (2017): a 51 years old male, anginal pain on exertion for 2 weeks, decrease on NTG administration with multiple cardiovascular risk factors: smoking, hypertension, dyslipidemia, with ECG changes and the coronary angiogram shows: 3 vessels disease (Figures 1 & 2).

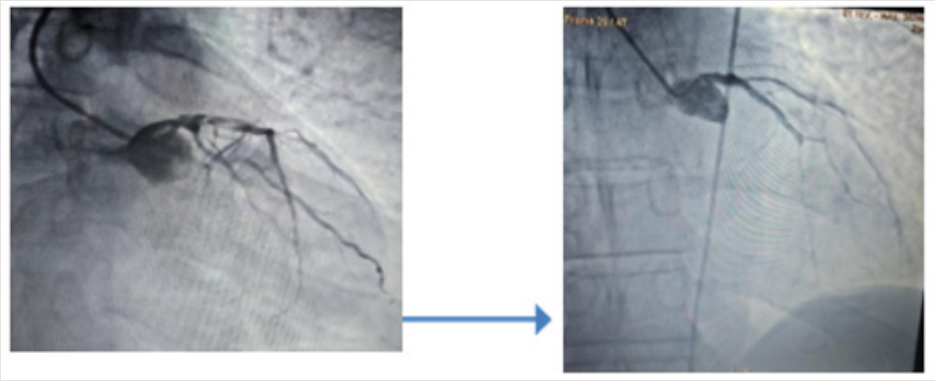

Figure 1: Revascularization of LM.

Figure 2: Revascularization of RCA and sealing of the dissection (Class 2).

Management

Immediate Steps

1. Stop contrast injections and stabilize the patient.
2. Rapid imaging (echocardiography, transesophageal echo, or CT aorta) is essential.

Interventional Treatment

If dissection entry is at the ostium and extension is limited (Class 1–2) → seal with an ostial stent to close the entry tear.

CTScan of the Dissection

Nowadays, 58 years old with sever anginal pain, correcting most of the cardiovascular risk factors, he has a distal stenosis in the LAD (Figures 3 & 4).

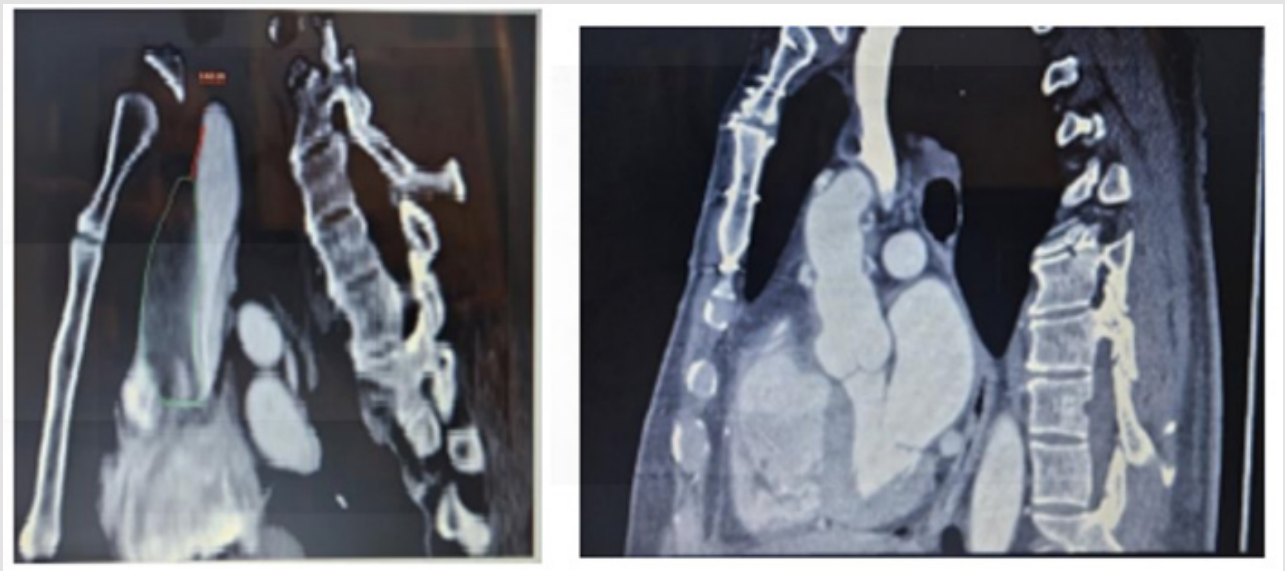

Figure 3: After 3 months of repair surgical needed repair.

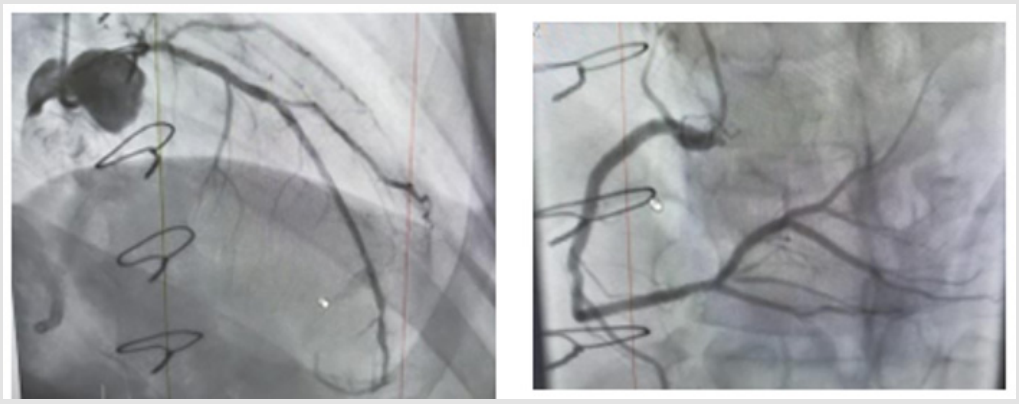

Figure 4: LAD stenting RCA patency after 7 years.

Prognosis

1. Mortality ≈ 7 % overall in large case reviews (86 cases)
2. Prognosis depends on the extent of dissection and speed of recognition/treatment.
3. Many localized dissections treated promptly with stenting have a favorable outcome.

Conclusion

1. Though rare, iatrogenic aortic dissection during PCI is an emergency that every interventional cardiologist must recognize immediately.
2. Prevention: gentle catheter manipulation, proper ostial alignment, cautious contrast injection.
3. Prompt recognition and correct management (stent vs surgery) are critical for survival.
4. The modern trend favors endovascular repair (ostial stenting) in stable cases, but surgery remains lifesaving for extensive or unstable dissections.

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