Case Report

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A Case of Dual Left Anterior Descending Artery (LAD) With Myocardial Infarction from Short LAD

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A 61-year-old male patient came to our hospital with acute onset retrosternal chest pain radiating to left arm with sweating for 3-4 hours. On physical examination, his blood pressure was 150/70 mmHg, and his heart rate was 84 beats/min. Electrocardiography showed ST segment elevation in anterior precordial leads, suggestive of acute anterior wall ST elevation MI (Figure 1). Echocardiography revealed regional wall motion abnormality in LAD artery territory (Video 1). He was urgently taken for coronary angiography which revealed presence of dual Left Anterior Descending (LAD) coronary artery. One long LAD was arising from Right Coronary Artery (RCA) which was normal (Figures 2 & 3, Video 2 & 3). Another short LAD was arising from Left Main Coronary Artery (LMCA) and having significant lesion in its proximal part responsible for myocardial infarction (Figure 4, Video 4 & 5). Therefore, his primary coronary angioplasty with stenting was done immediately (Figure 5, Video 6).

A dual left anterior descending (LAD) artery is a rare coronary anomaly with an estimated incidence of 0.03–0.2% among patients undergoing routine coronary catheterization. It is defined as the presence of both short and long LAD arteries. Awareness of the different types of dual LAD artery anomalies (Table 1) is critical when planning percutaneous and surgical reperfusion strategies. In our case there was presence of type-6 LAD having lesion in short LAD and it was managed successfully with primary coronary angioplasty [1,2].

Table 1: Classification of the Dual Left Anterior Descending Artery
Classification of the Dual Left Anterior Descending Artery

Type of dual LAD	LAD Proper	Short LAD Origin	Long LAD Origin
Type-1	Present	From LAD proper	From LAD proper
Type-2	Present	From LAD proper	From LAD proper
Type-3	Present	From LAD proper	From LAD proper
Type-4	Absent	From LMCA	From RCA
Type-5	Absent	From LCS	From RCS
Type-6	Absent	From LMCA	From RCA
Type-7	Absent	From LMCA	From RCS
Type-8	Absent	From LMCA	From mid RCA
Type-9	Present	From LAD proper	From LAD proper

Figure 1: Electrocardiography showing ST segment elevation in anterior precordial leads

Figure 2: Coronary angiographic projection showing long LAD arising from RCA

Figure 3: Coronary angiographic projection showing long LAD arising from RCA.

Figure 4: Coronary angiographic projection showing short LAD arising from LMCA having significant lesion

Figure 5: Coronary angiographic projection showing short LAD after coronary angioplasty with stent placement

Video 1

2 D echocardiography view showing regional wall motion abnormality in LAD artery territory.

Video 2

Coronary angiographic projection showing long LAD arising from RCA.

Video 3

Coronary angiographic projection showing long LAD arising from RCA.

Video 4

Coronary angiographic projection showing short LAD arising from LMCA having significant lesion.

Video 5

Coronary angiographic projection showing short LAD arising from LMCA having significant lesion.

Video 6

Coronary angiographic projection showing short LAD after coronary angioplasty with stent placement.

References

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