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First septal and diagonal arteries anomalously originating from the left main coronary artery: A very rare coincidence

A 47-year-old male who had been admitted to our emergency department was diagnosed with acute coronary syndrome. Coronary angiography revealed a true spider view in the left anterior oblique (LAO) caudal view; it included the first septal artery (FSA),



Figure 1. True spider view in the left anterior oblique view with caudal angulation

FSA - first septal artery; LAD - left anterior descending artery; IMA - intermediate artery; PDA - posterior descending artery

left anterior descending artery, first diagonal artery, intermediate artery, and left circumflex artery all originating from the left main coronary artery (Fig. 1, Video 1). Stenosis (99%) was observed in the proximal LAD. Selective right coronary angiography revealed chronic total occlusion in the mid portion. In the LAO cranial view of the left coronary system, FSA appeared to supply collateral branches to the posterior descending artery (PDA), which was originating from the RCA (Video 1, 2).

Most coronary origination anomalies are clinically silent and are incidentally encountered either via coronary angiography or computerized tomography. However, they can prove crucial when it comes to providing collateral circulation to the other main arteries that were unable to supply adequate blood flow to their pertinent territories. Moreover, anomalous FSAs may play a pivotal role in providing collateral blood flow in severe coronary arterial diseases. To our knowledge, this is the first case report describing the co-existence of the first septal and diagonal arteries anomalously originating from the left main coronary artery.

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Video 1. Left anterior oblique view with caudal angulation representing a true spider view.

Video 2. Left anterior oblique view with cranial angulation showing collateral circulation from the first septal artery to the right coronary artery.

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