



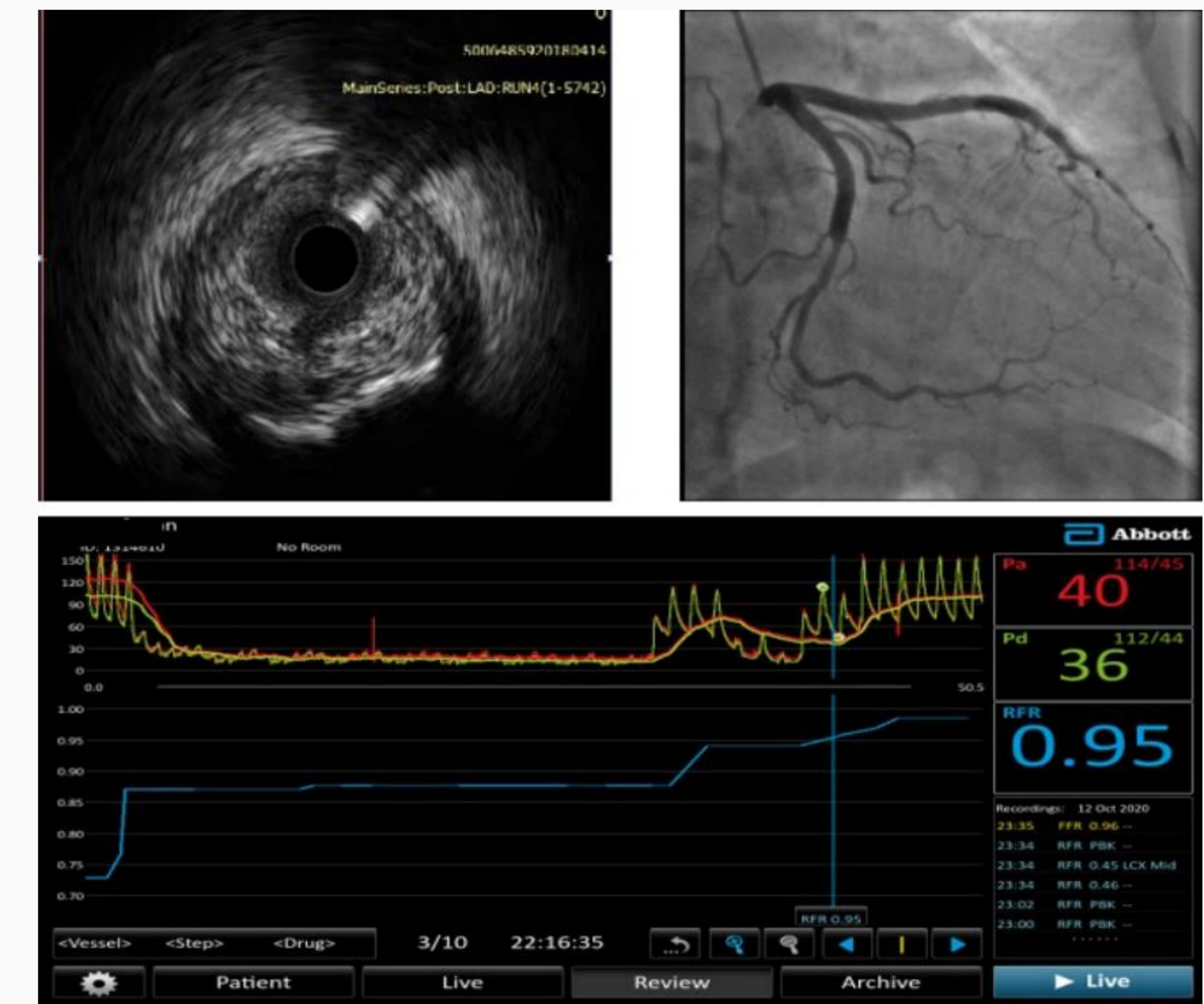
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Exploration of multi-mode fusion system for fraction of coronary flow reserve based on intravascular imaging

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Coronary heart disease (CHD) is one of the world's highest mortality is the human major threat to the health of the class. In the process of percutaneous interventional diagnosis and treatment of coronary heart disease , intracavitary imaging such as *intravascular ultrasound (IVUS)* and *optical coherence tomography (OCT)* provide accurate evaluation of coronary anatomy and plaques , which can effectively compensate for coronary angiography itself. *Fractional flow reserve (FFR)* can provide accurate assessment of myocardial ischemia from a physiological perspective . Both have been proven to provide accurate, effective and reasonable treatment strategies for patients with coronary heart disease and effectively improve the clinical prognosis of patients .



However, current inspection methods can only provide a simple morphological or physiological information, the *lack of effective integration, not to provide integrated information*, therefore, to explore based on cavity image (OCT / IVUS) and functional within physiology (FFR) multi-modal integration evaluation system for accurate diagnosis and treatment of coronary heart disease is critical , which can provide coronary artery lumen within the image and function of physiological information .

This project *aims to explore the development of a multi-modal fusion system for coronary flow reserve based on intravascular imaging* such as IVUS and OCT, and use artificial intelligence technology to automatically identify and segment the coronary artery lumen in intraluminal images, as well as blood flow reserve score FFR calculated to achieve chambers integration evaluation function within the image and physiological indicators , provide for the diagnosis and treatment of coronary heart disease precision therapy, but will also reduce the burden for the national economic health .

