Purpose: A new approach presented to extract the coronary artery and blood flow patterns from the angiographic data. **Materials and methods:** The method uses a sequence of coronary angiographic data. Firstly, the morphological erosion and the half-thresholding are used for removing points except coronary area. Secondly, use morphological closing to join the gaps of the vessel. Thirdly, select the vessel points in the image sequence which is similar to the seed points. Make the seed points, which is also the whole skeleton of the vessel, continuously growing by the vessel points in the image sequence. Finally, compare the initial image sequence (grey value 0 to 1) with the seed image (binary image) which can bring the change of grey value in the vessel without the change of grey value in the background and save the result image sequence to AVI file. **Result:** The accurate boundary of the coronary artery is obtained and the blood flow is clearly present. **Conclusion:** The method is shown with better performance than current methods, particularly in modeling the flow pattern. And it's a very simple, fast and accurate method in precise diagnosis and treatment of patients.

Key words: coronary artery, extraction, flow pattern, seed.