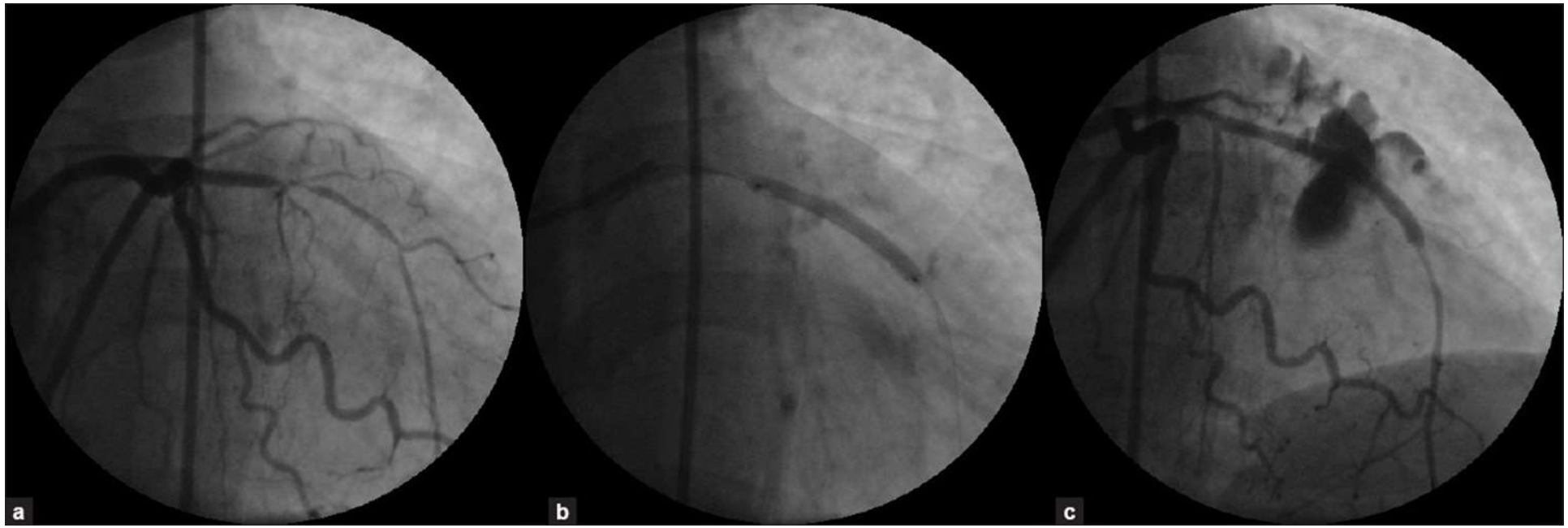
Coronary rupture: Four cases with imaging modality



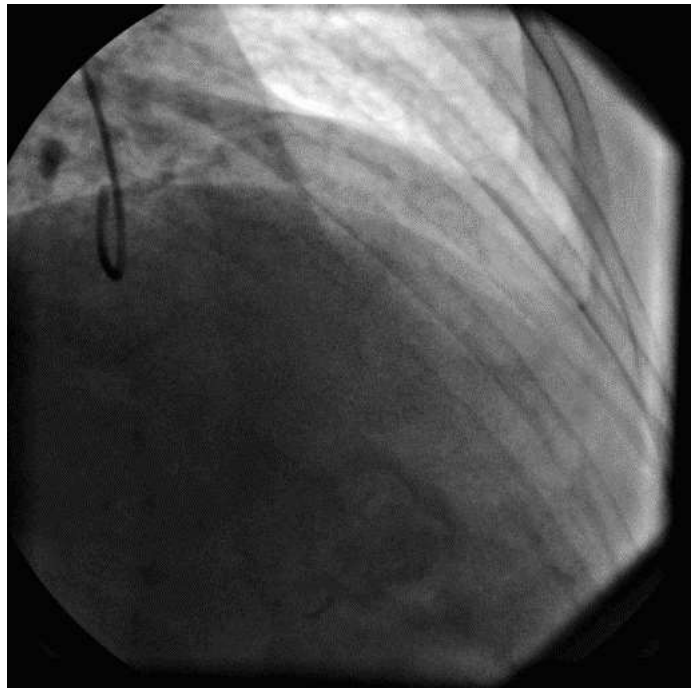
Seirei Yokohama Hospital
Hidehito Makabe

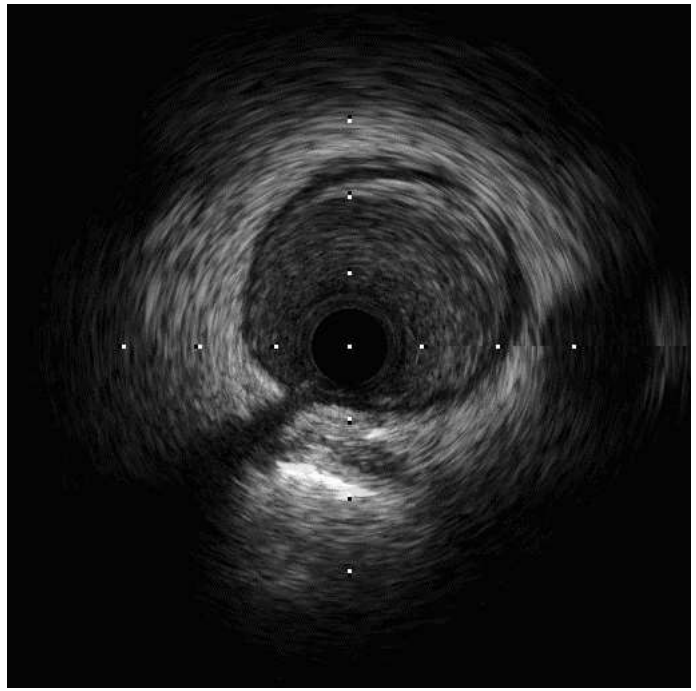
Backgroud

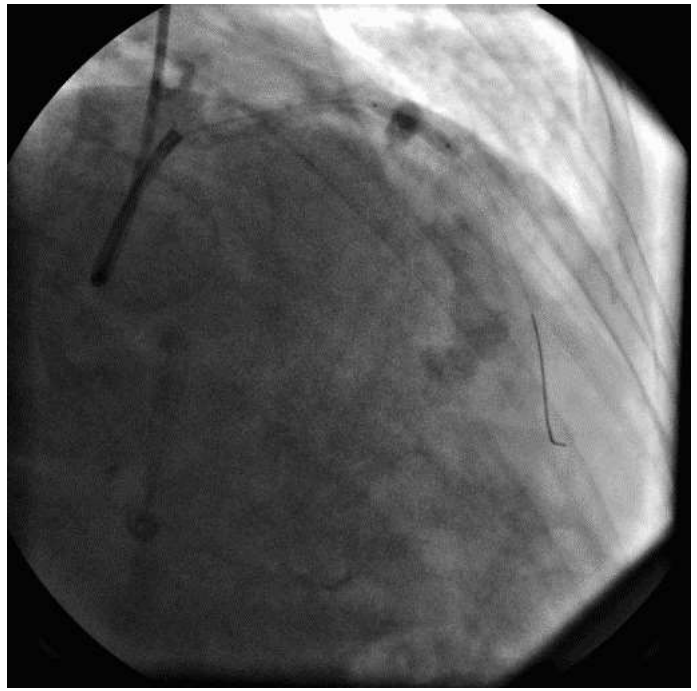
Coronary rupture or grade Ⅲ coronary perforation is a rare but feared complication of PCI, while it is still uncommonly reported but well recognized complication of PCI.

Background

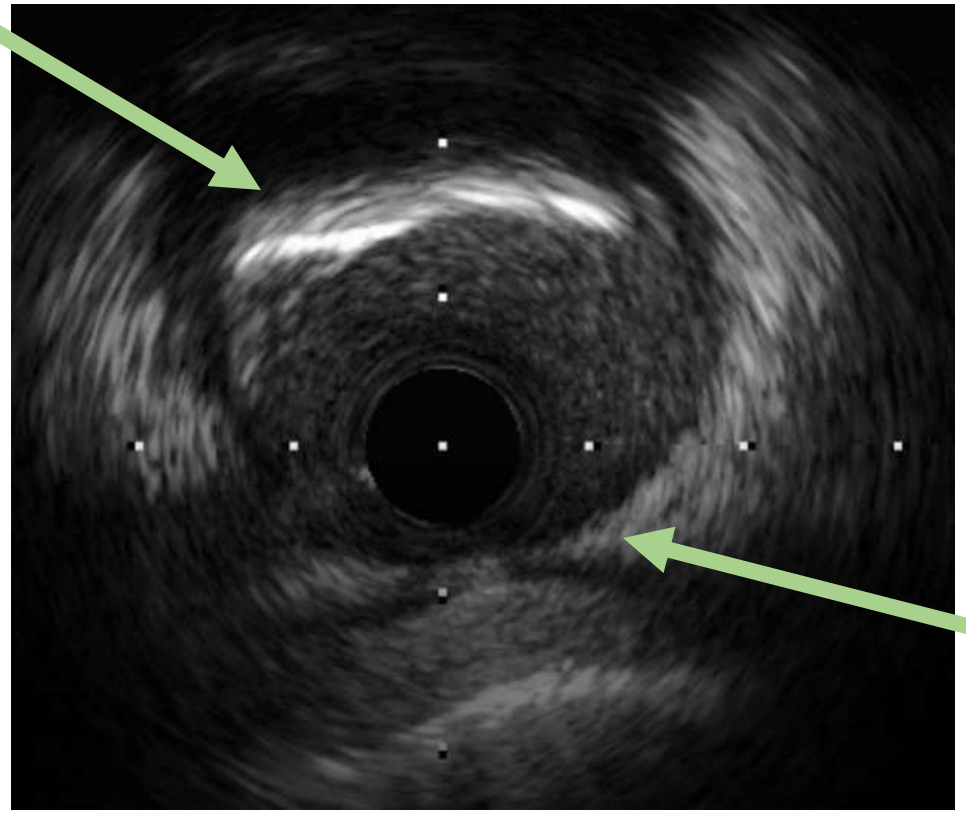
There are very few reports which observe the lesion characteristic before coronary rupture on the image modality(IVUS, OCT and OFDI).
We experienced four coronary rupture cases at our hospital from May 2015 to October 2017, one of them was observed by OFDI image, the remaining were observed by IVUS image.



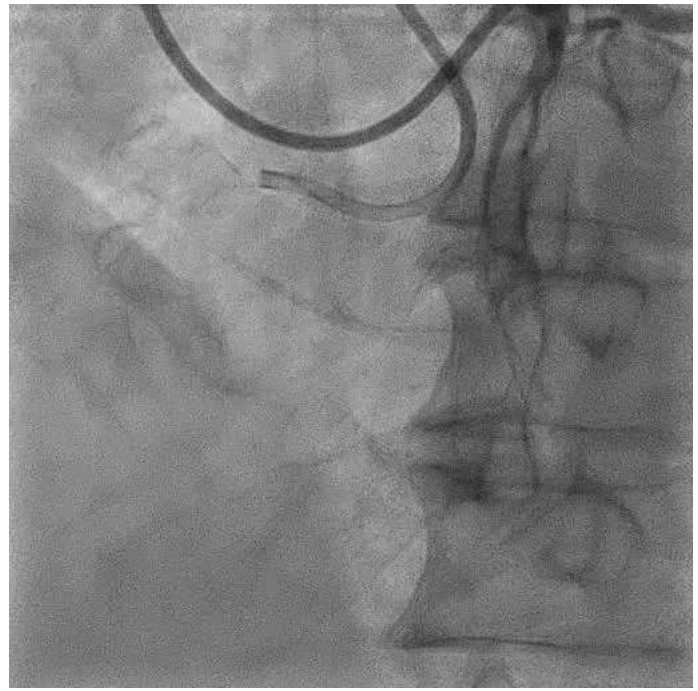




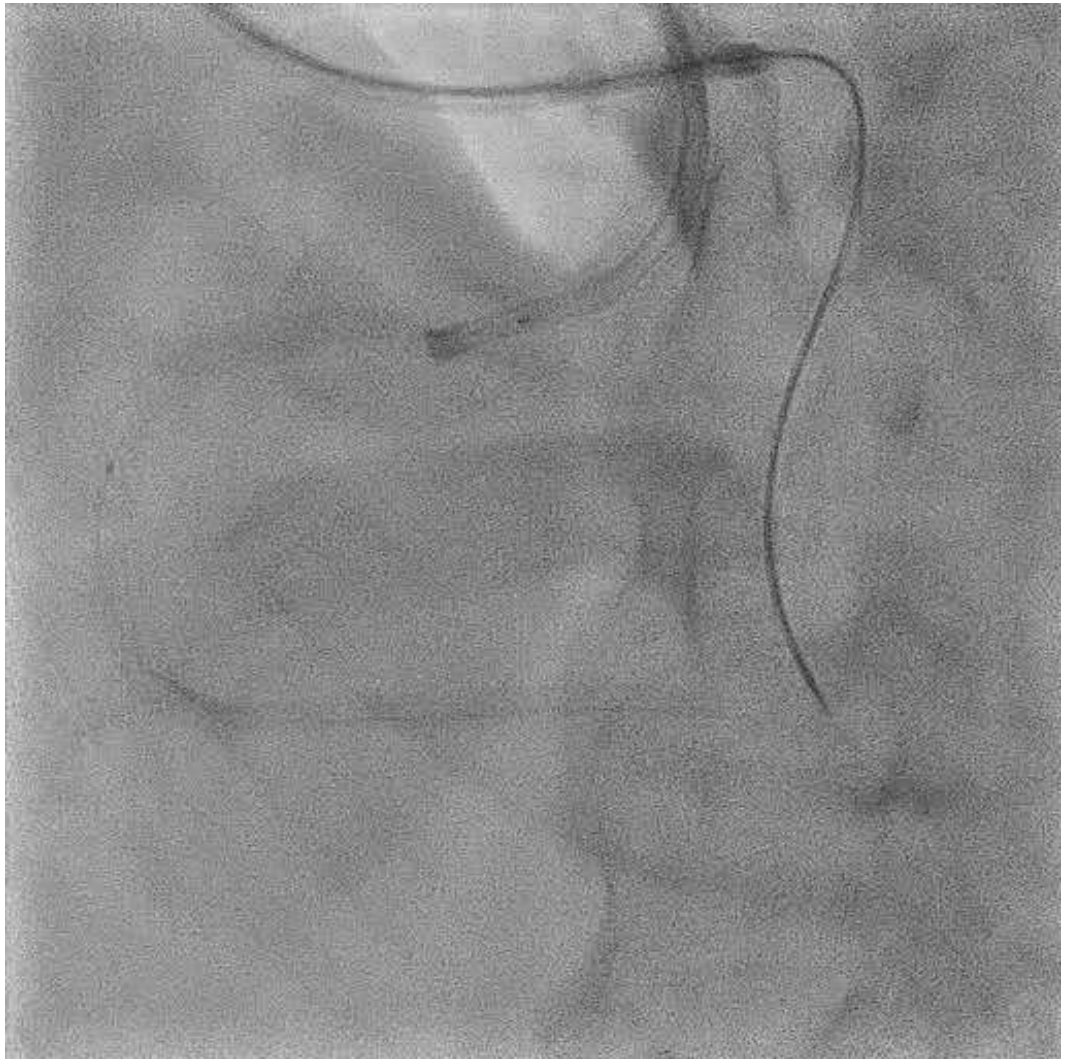
The eccentric calcification or fibrous plaque

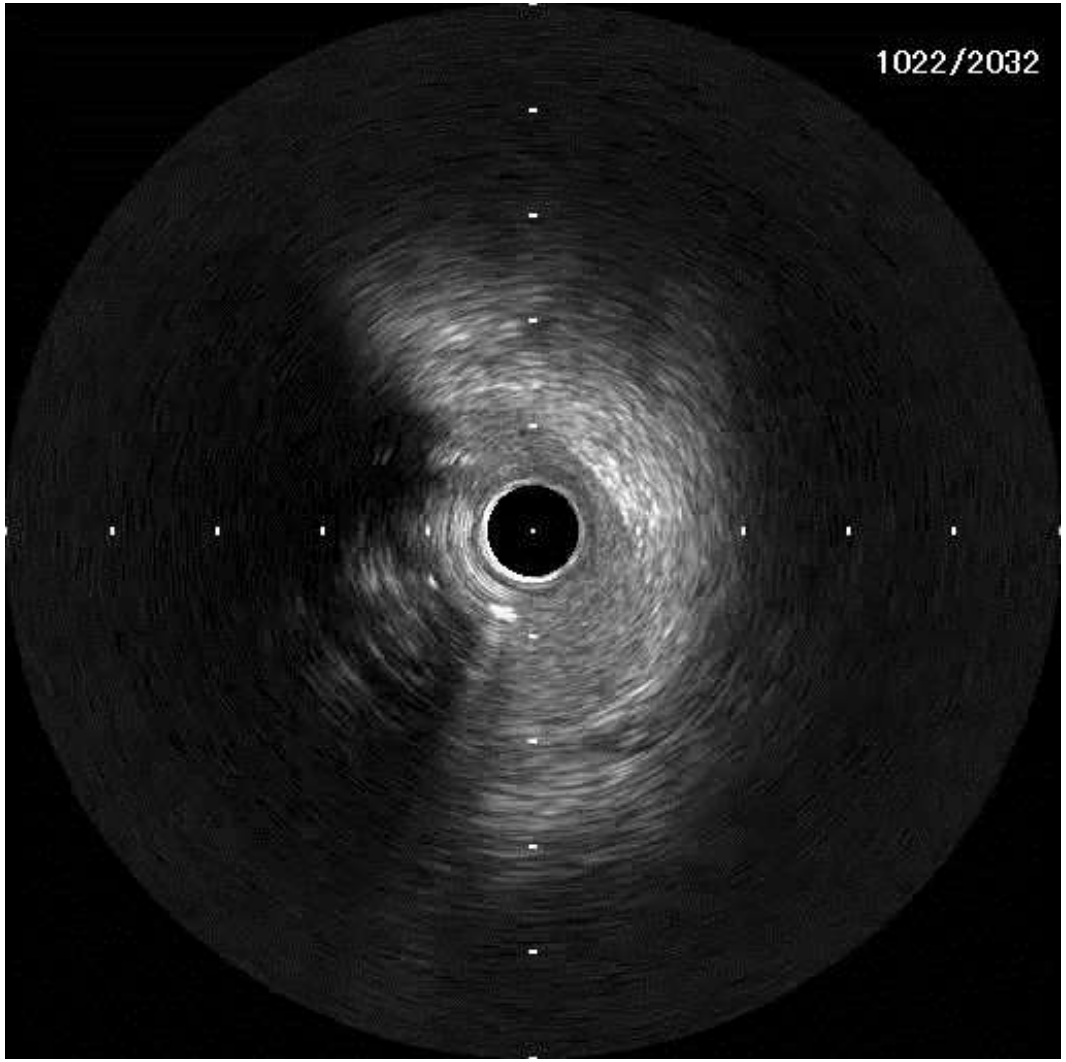


The no plaque site (the healthy site)

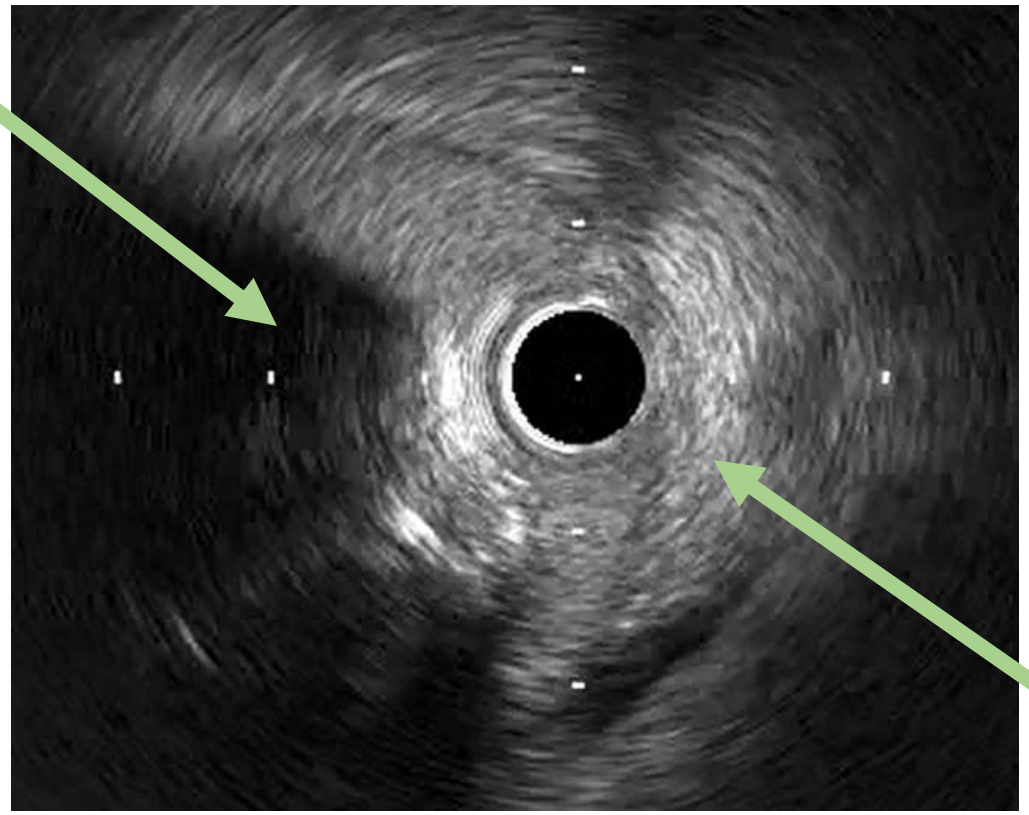


Case2





The eccentric hard plaque



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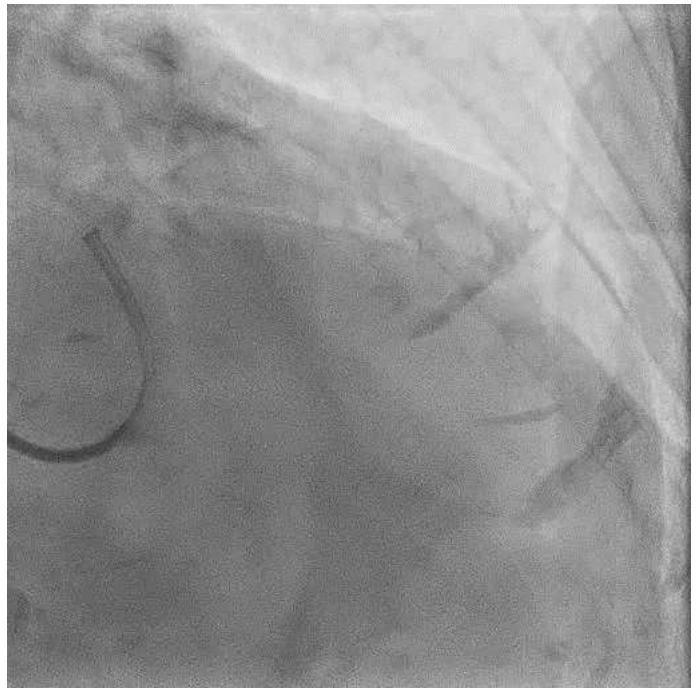
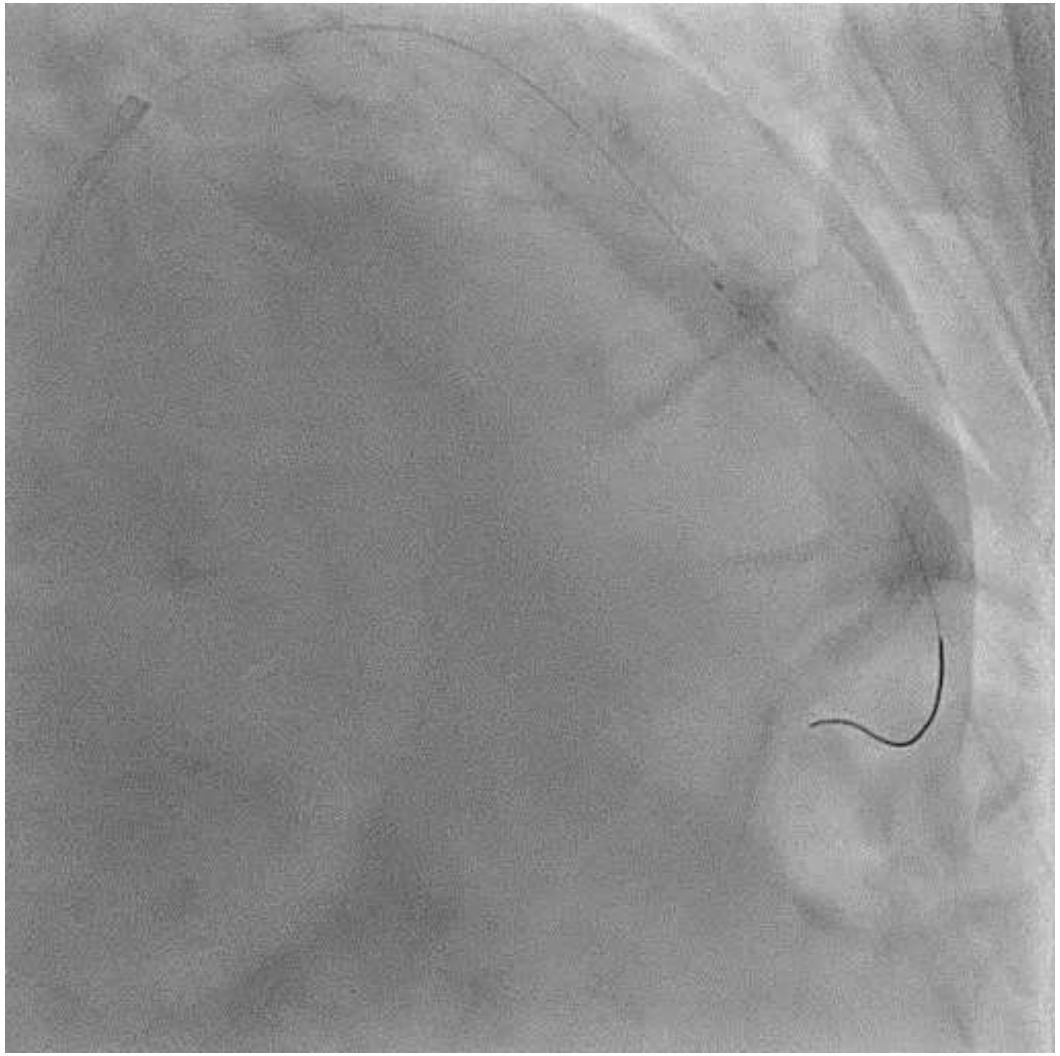
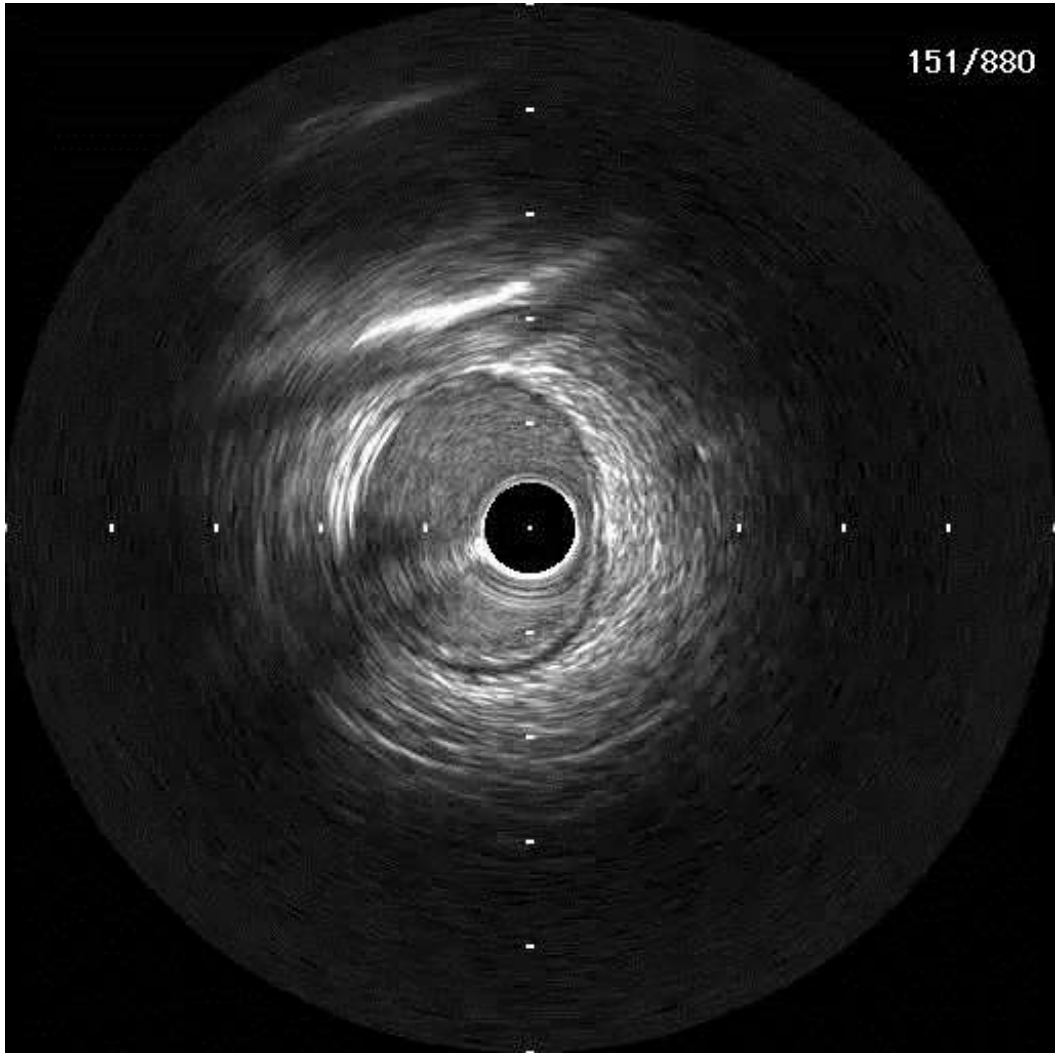
(the healthy site)

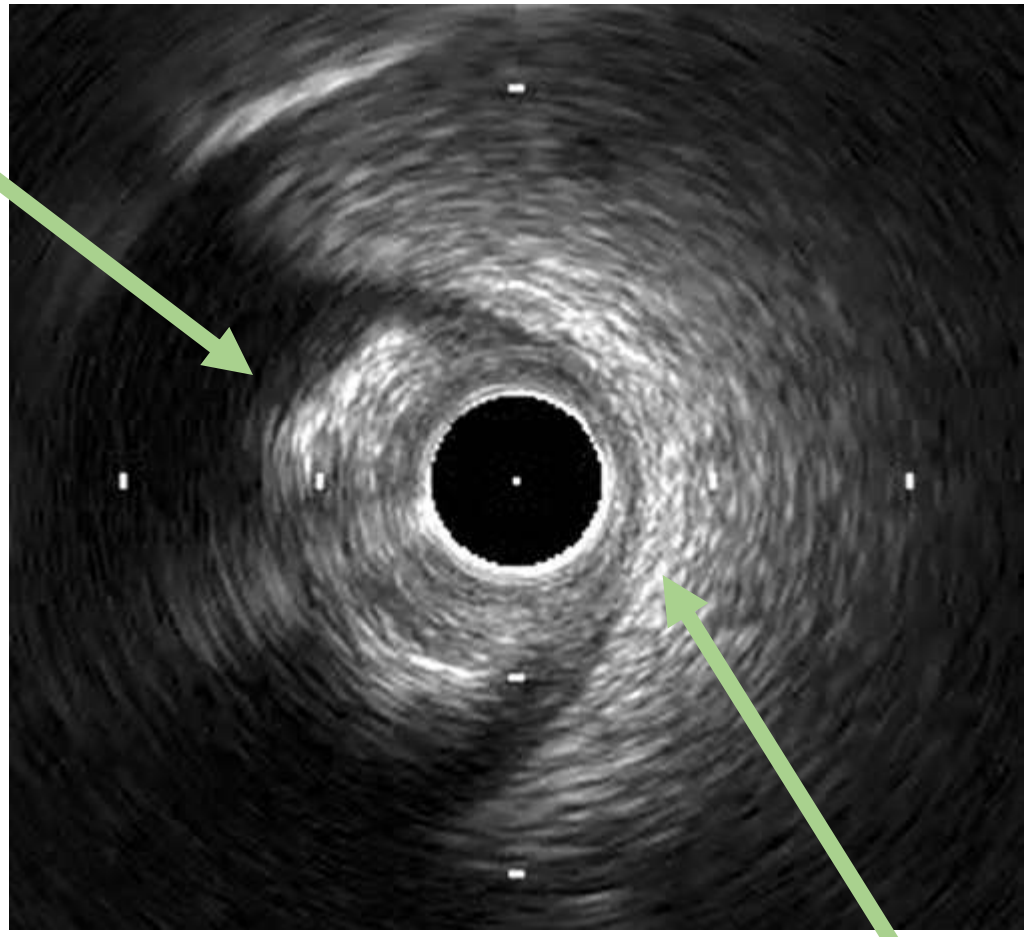


Case3





The eccentric calcification or fibrous plaque



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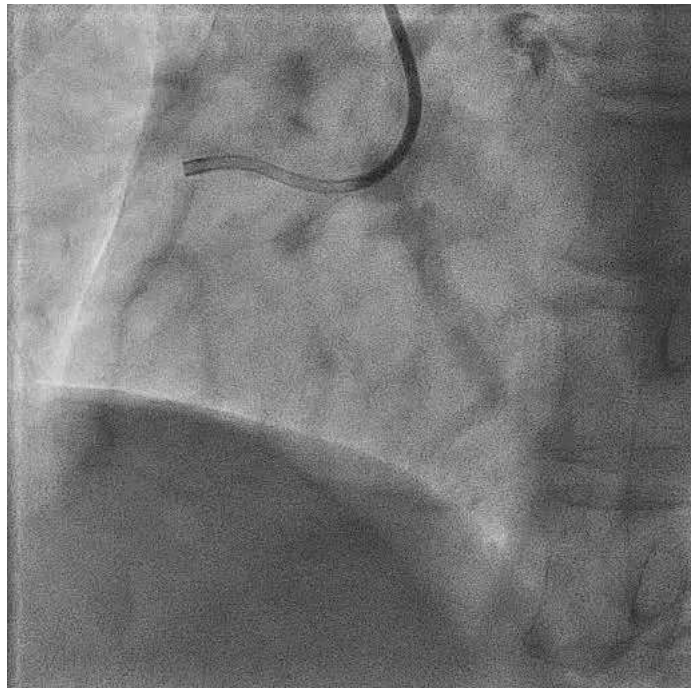
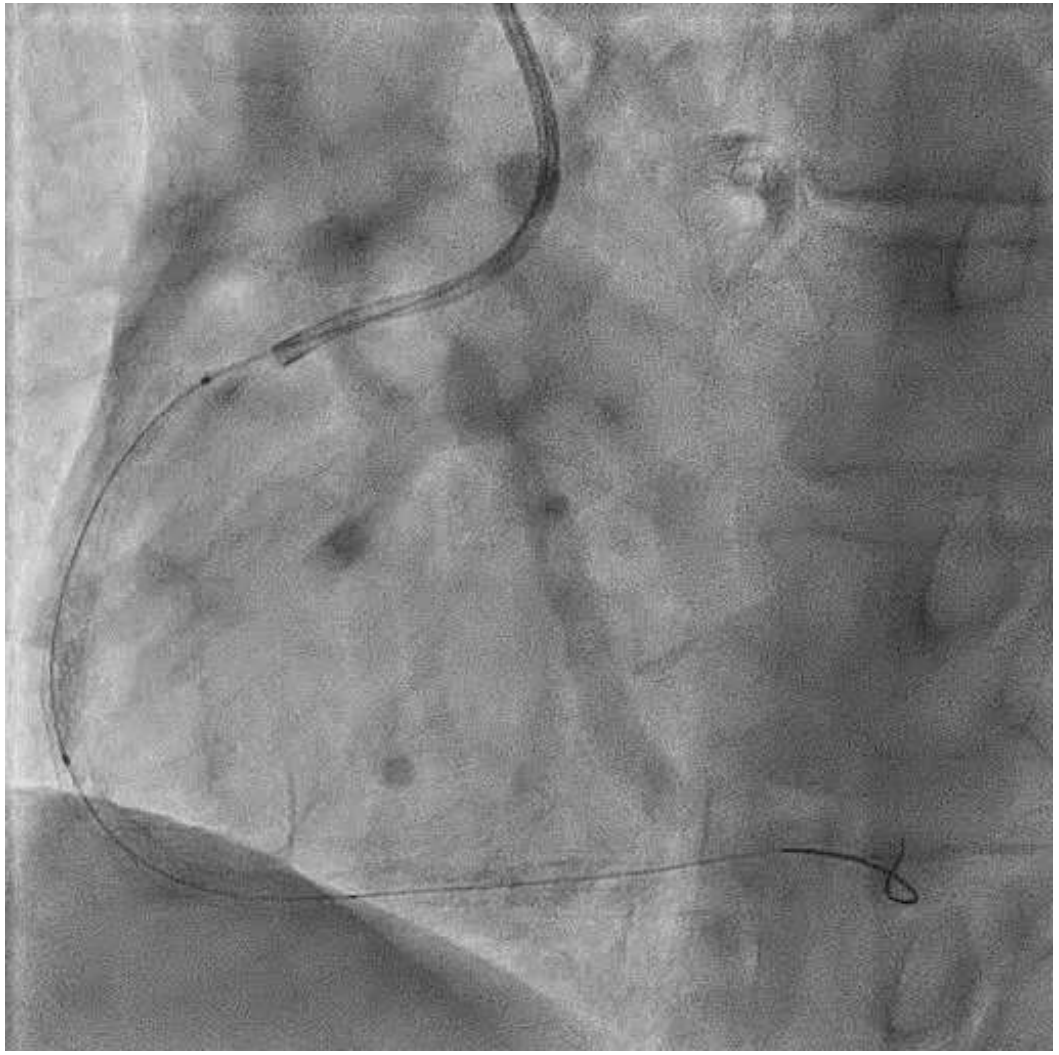
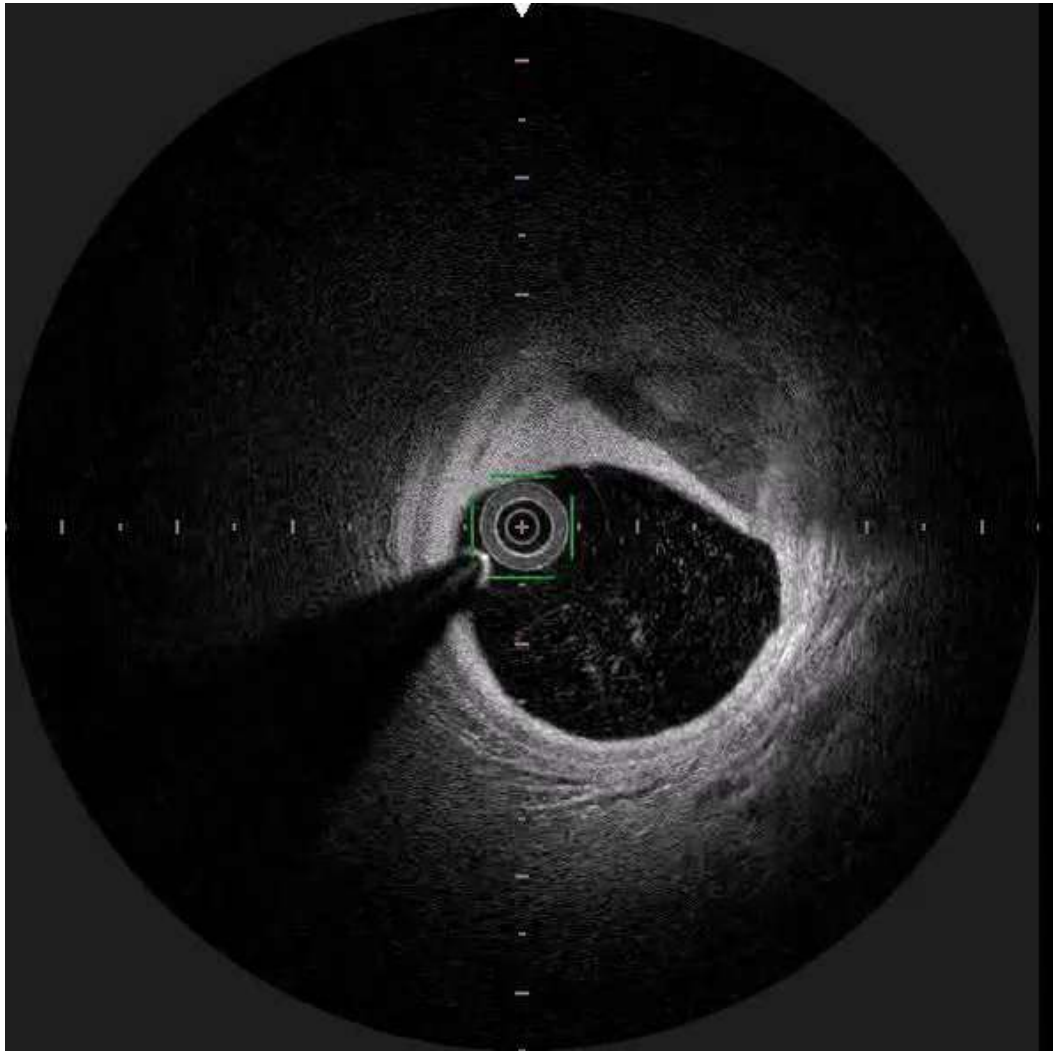
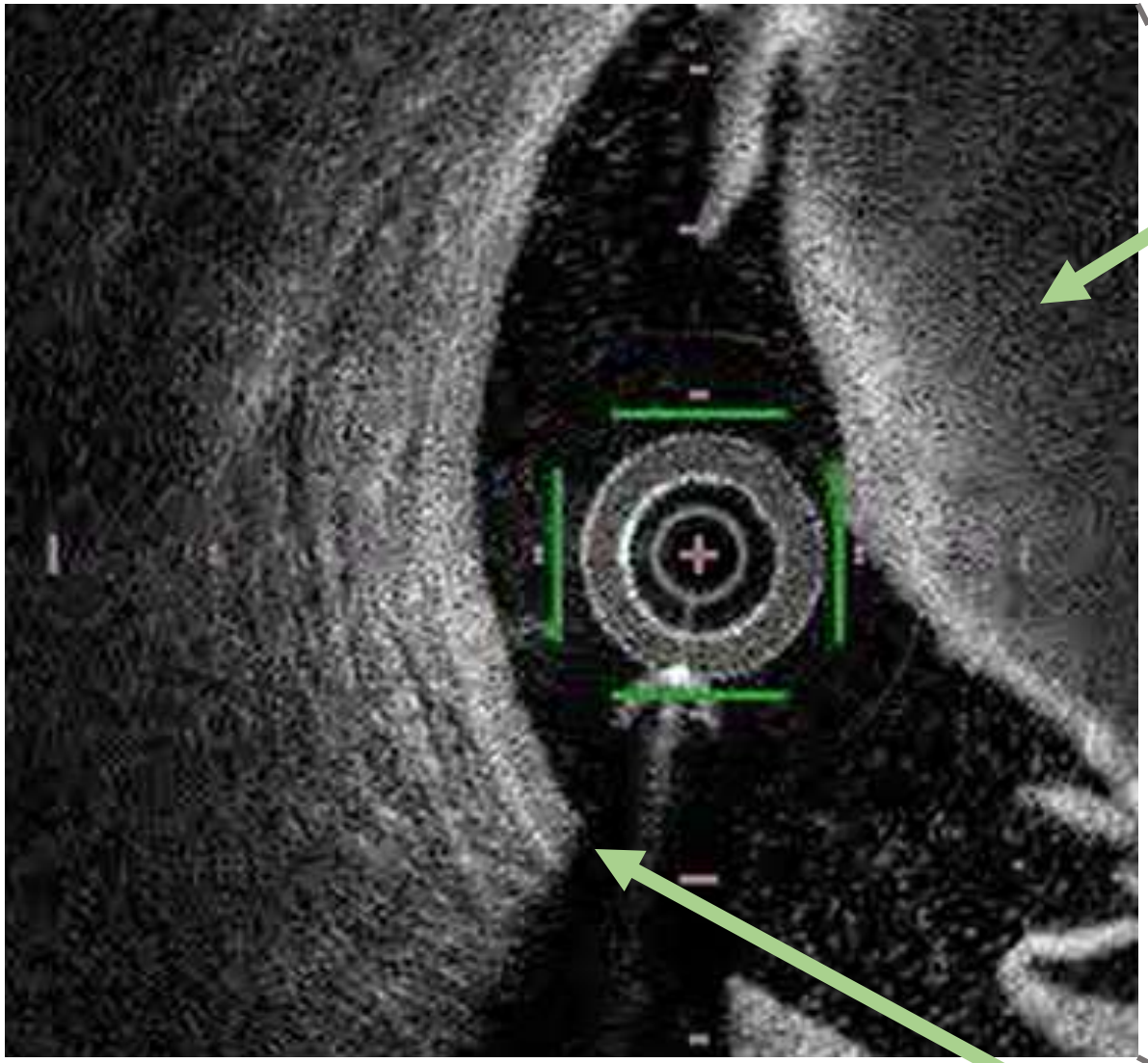


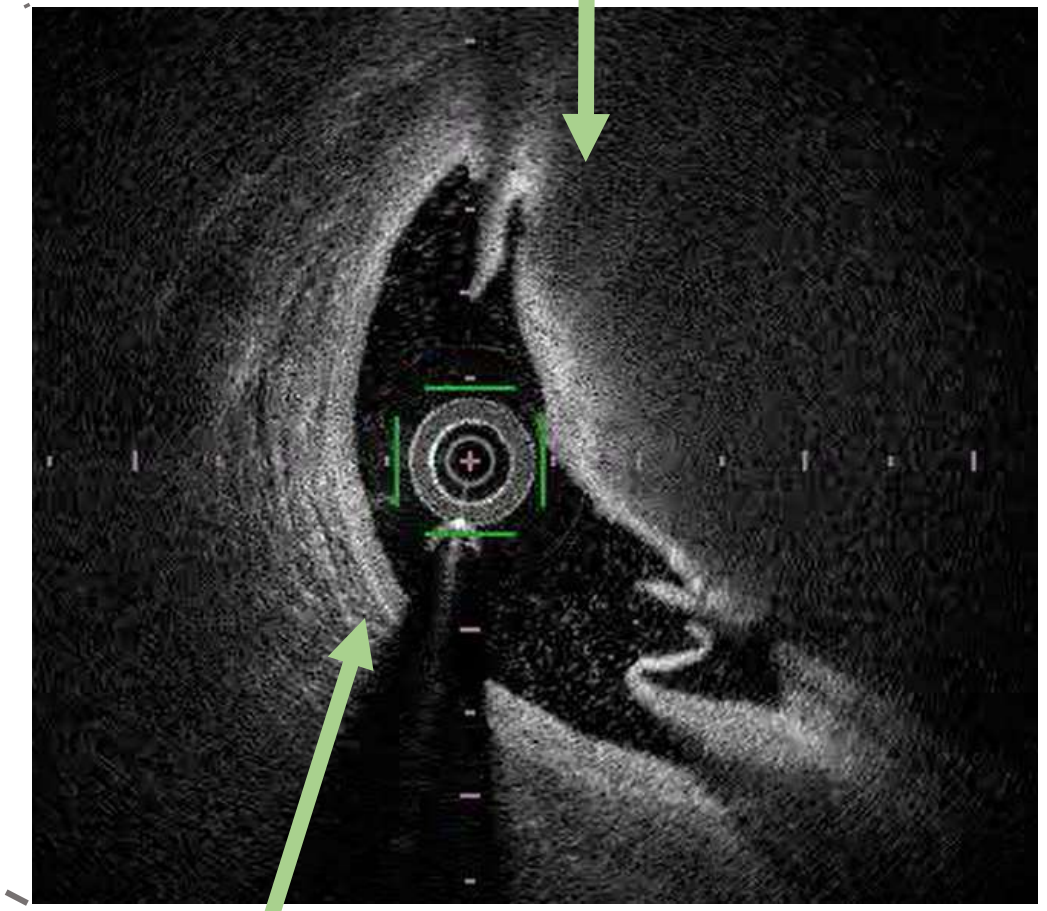
Case4





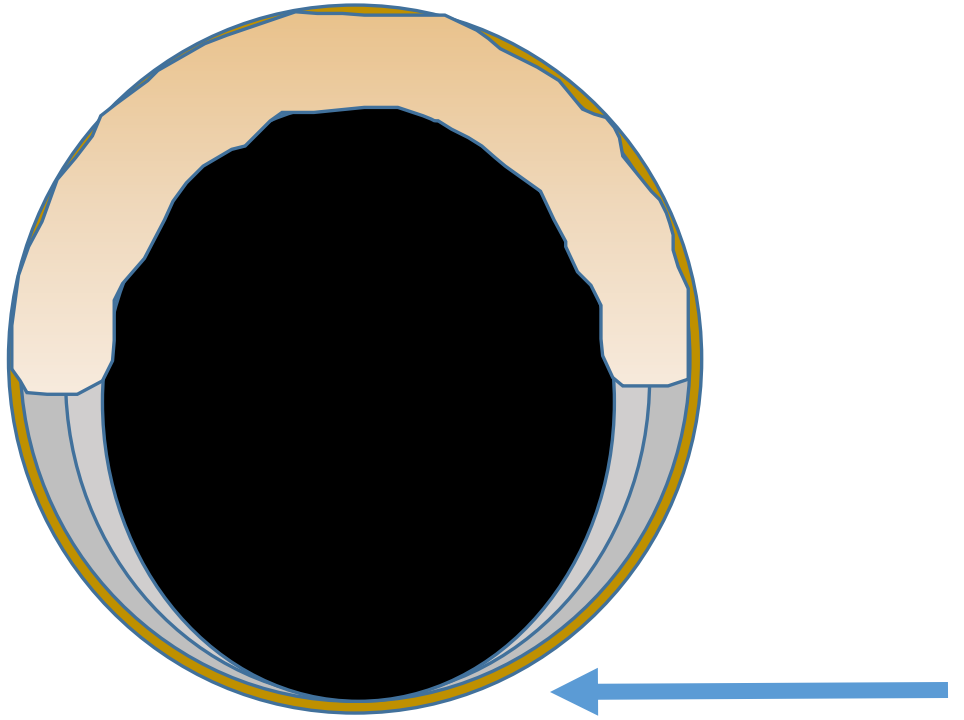


The eccentric calcification or fibrous plaque



The normal structure without plaque

Eccentric calcification or fibrous plaque



The no plaque site
(the healthy site)

Yokoi, Kensuke, and Sumitsuji Satoru(2015) "Coronary Rupture", in Hone Jyunko(ed.), *Tips and Tricks for IVUS guided PCI*. Tokyo: MEDICAL VIEW, pp. 48-54.

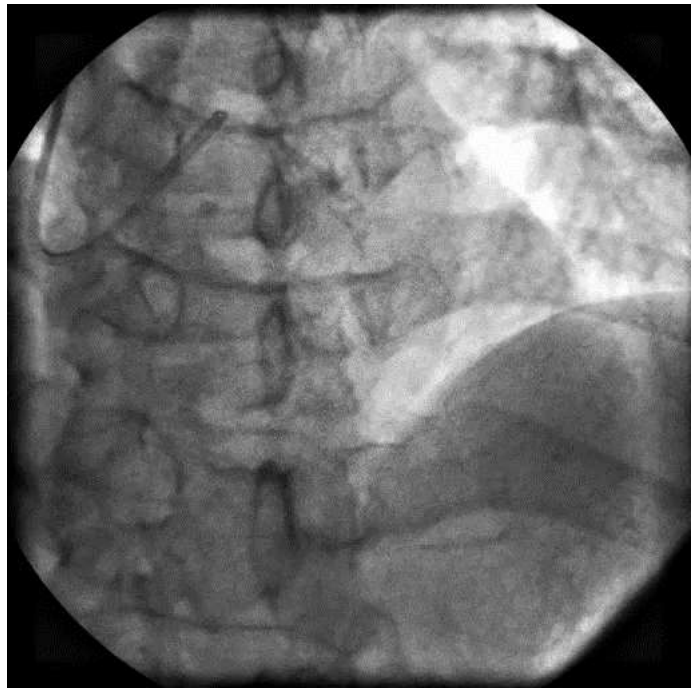
Discussion

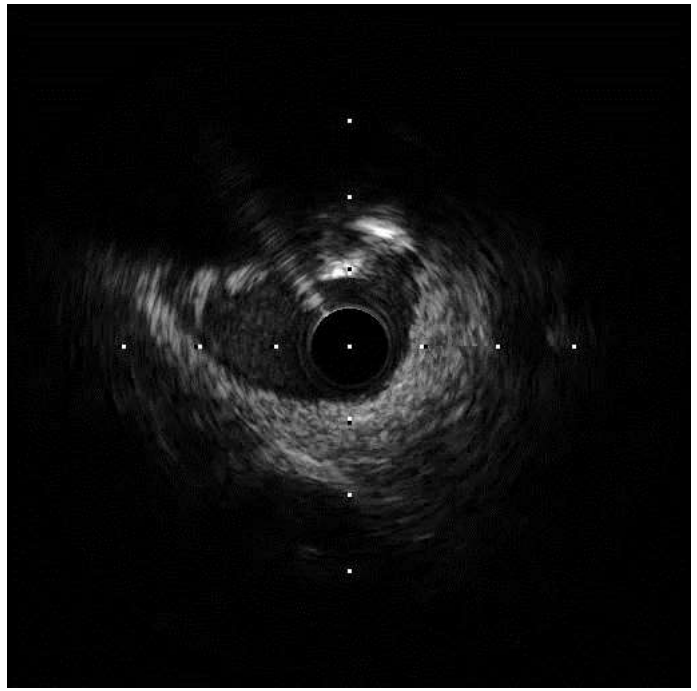
- All our cases on IVUS or OFDI showed eccentric calcification or fibrous plaque and on the other side no intima plaque.
  This was in accord with the report by Yokoi and Sumitsuji.
- In order to avoid coronary rupture, it is important to assess the lesion characteristic by using IVUS or OFDI, and so on.

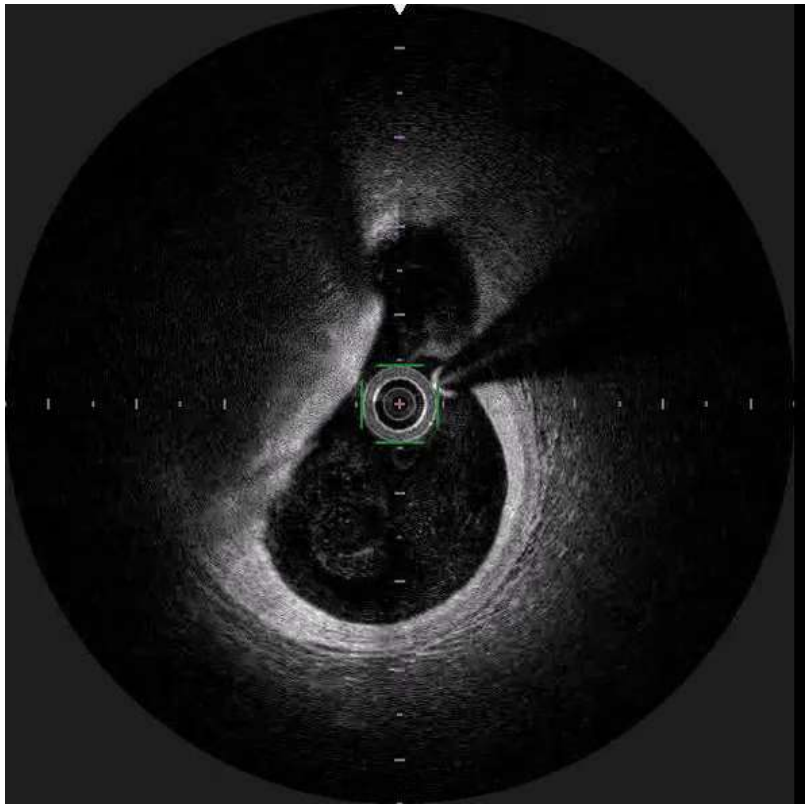
Yokoi, Kensuke, and Sumitsuji Satoru(2015) "Coronary Rupture", in Hone Jyunko(ed.), Tips and Tricks for IVUS guided PCI. Tokyo: MEDICAL VIEW, pp. 48-54.

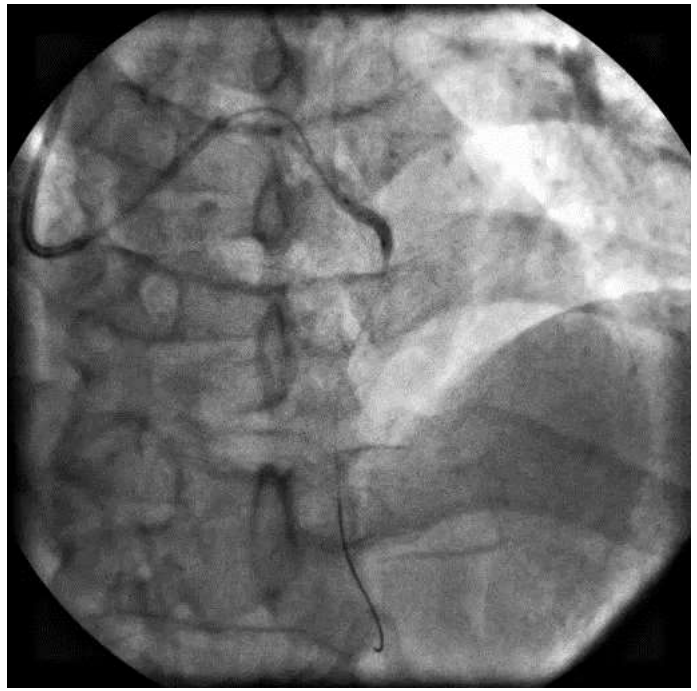
Modification for the hard plaque

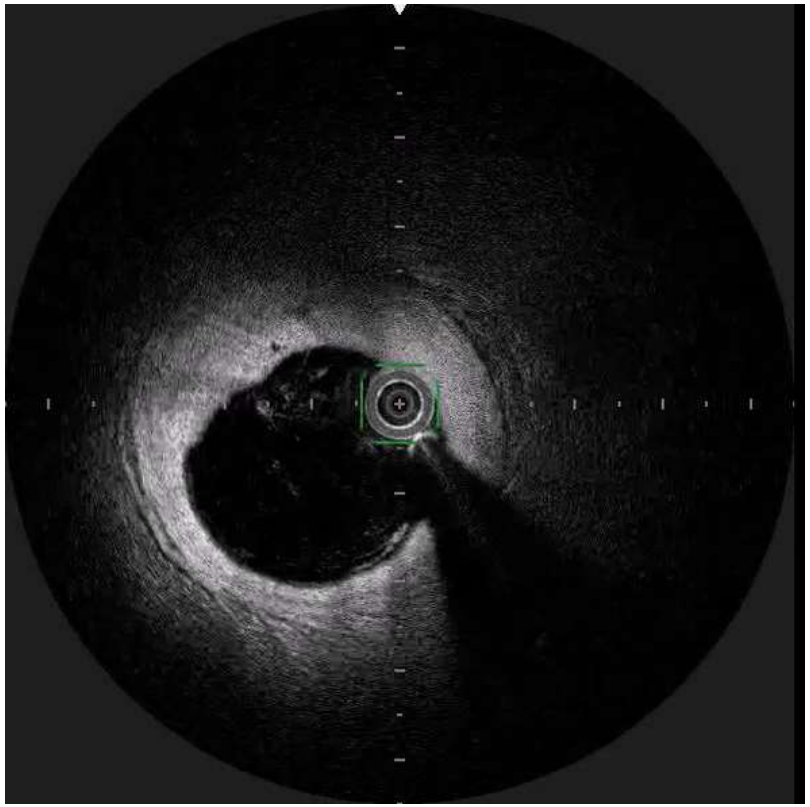
- For the purpose avoiding coronary rupture, it is most likely effective to make adequate modification for hard plaque, for example crack formation or media dissection behind the hard plaque by scoring/cutting balloon dilatation.

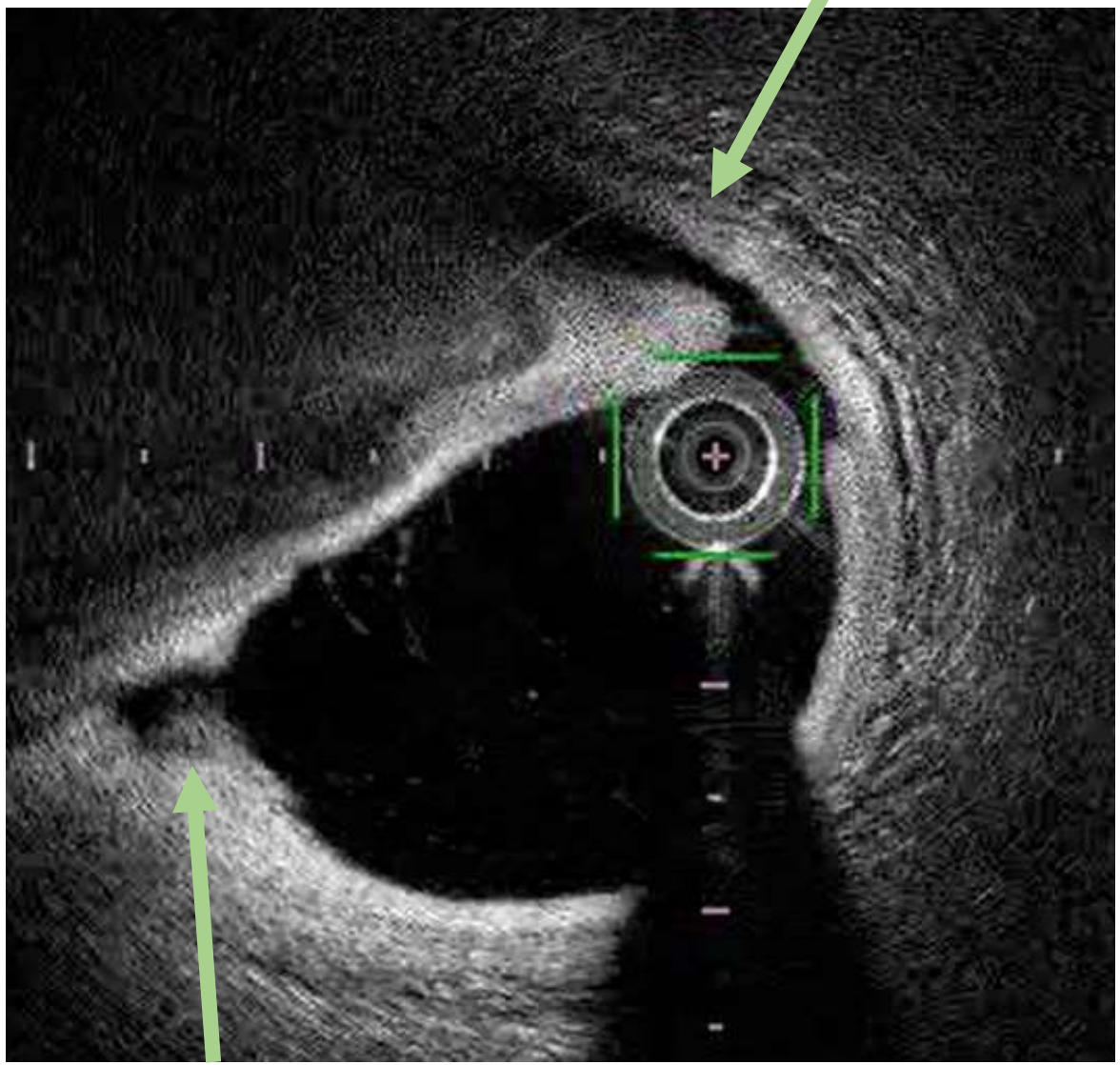


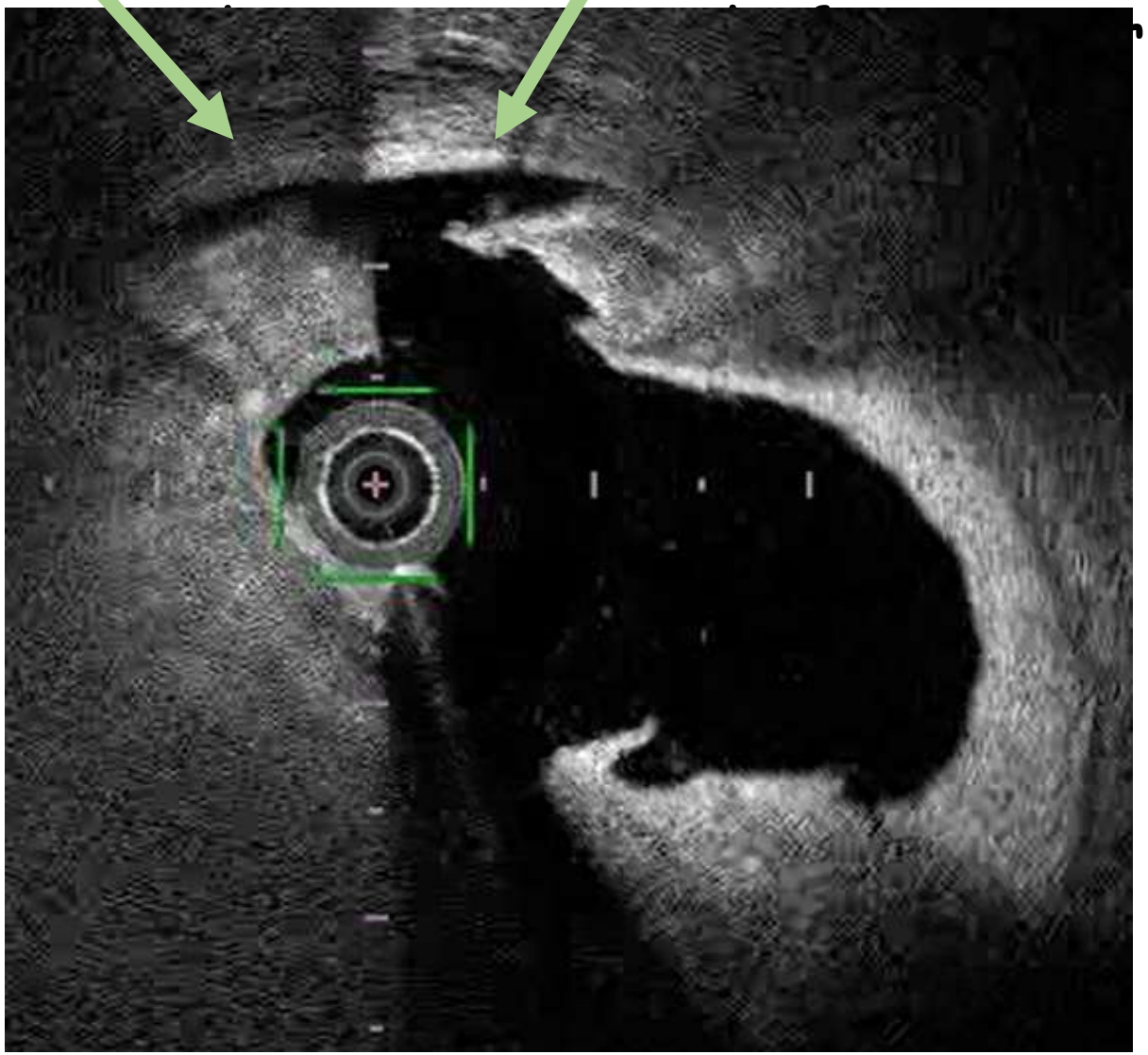




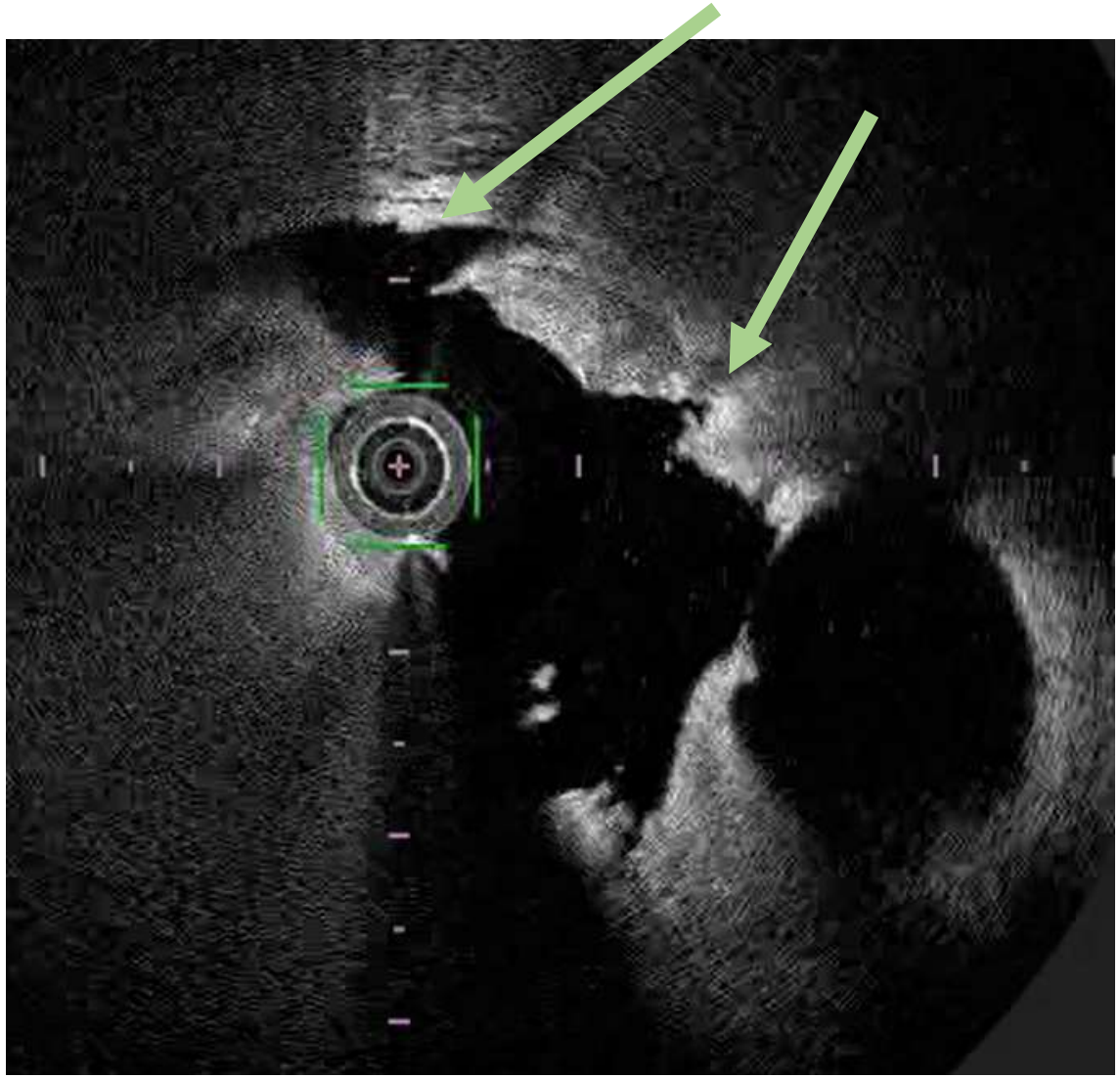


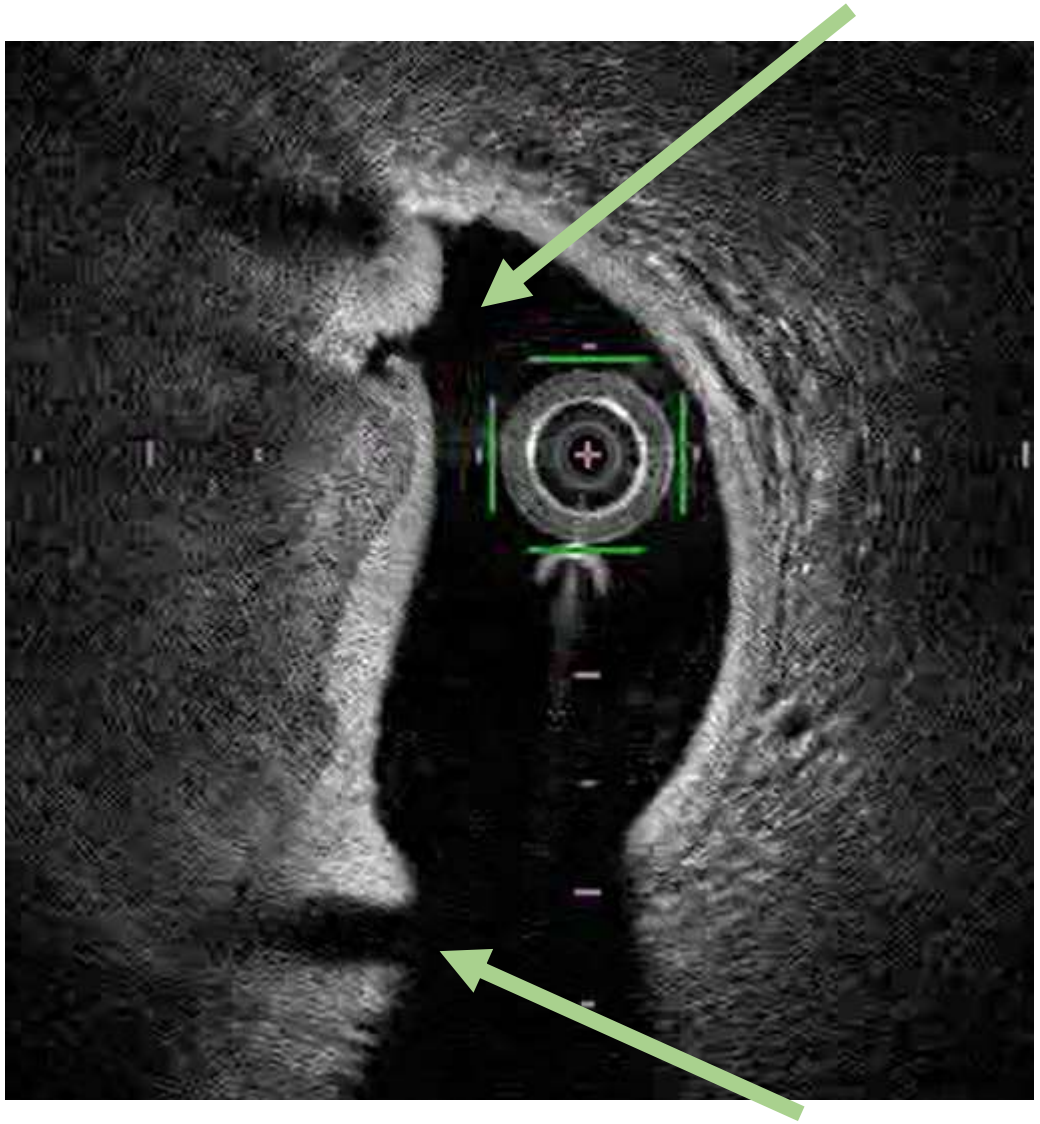






Cracks and dissection
near/behind the hard plaque





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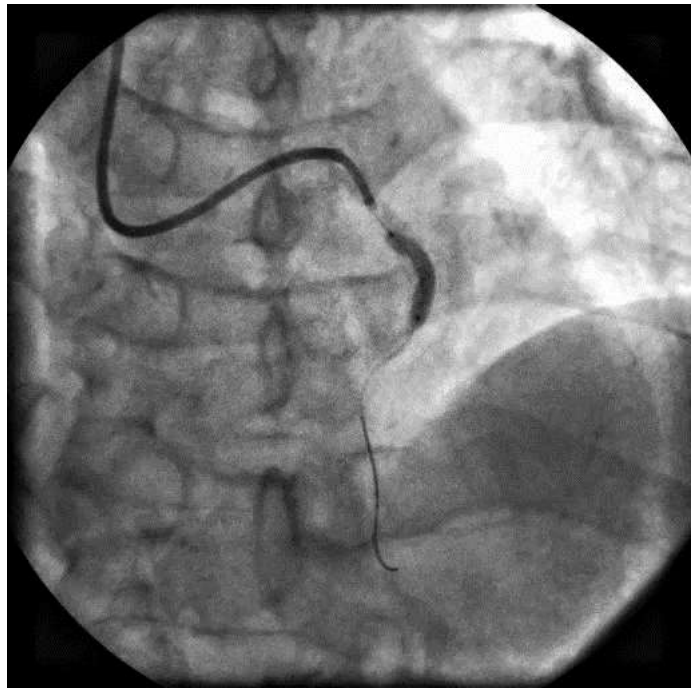

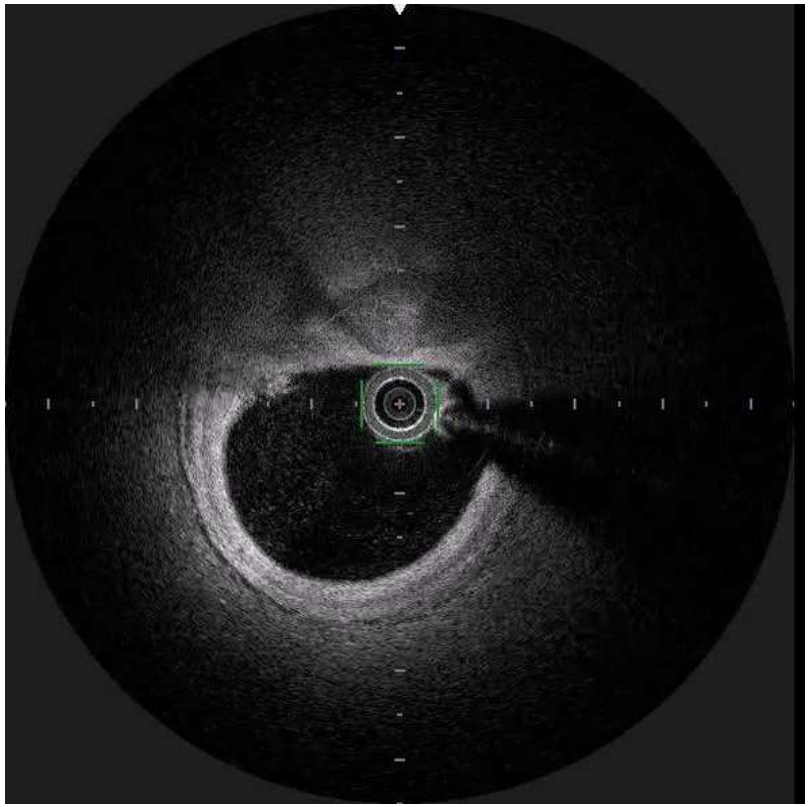

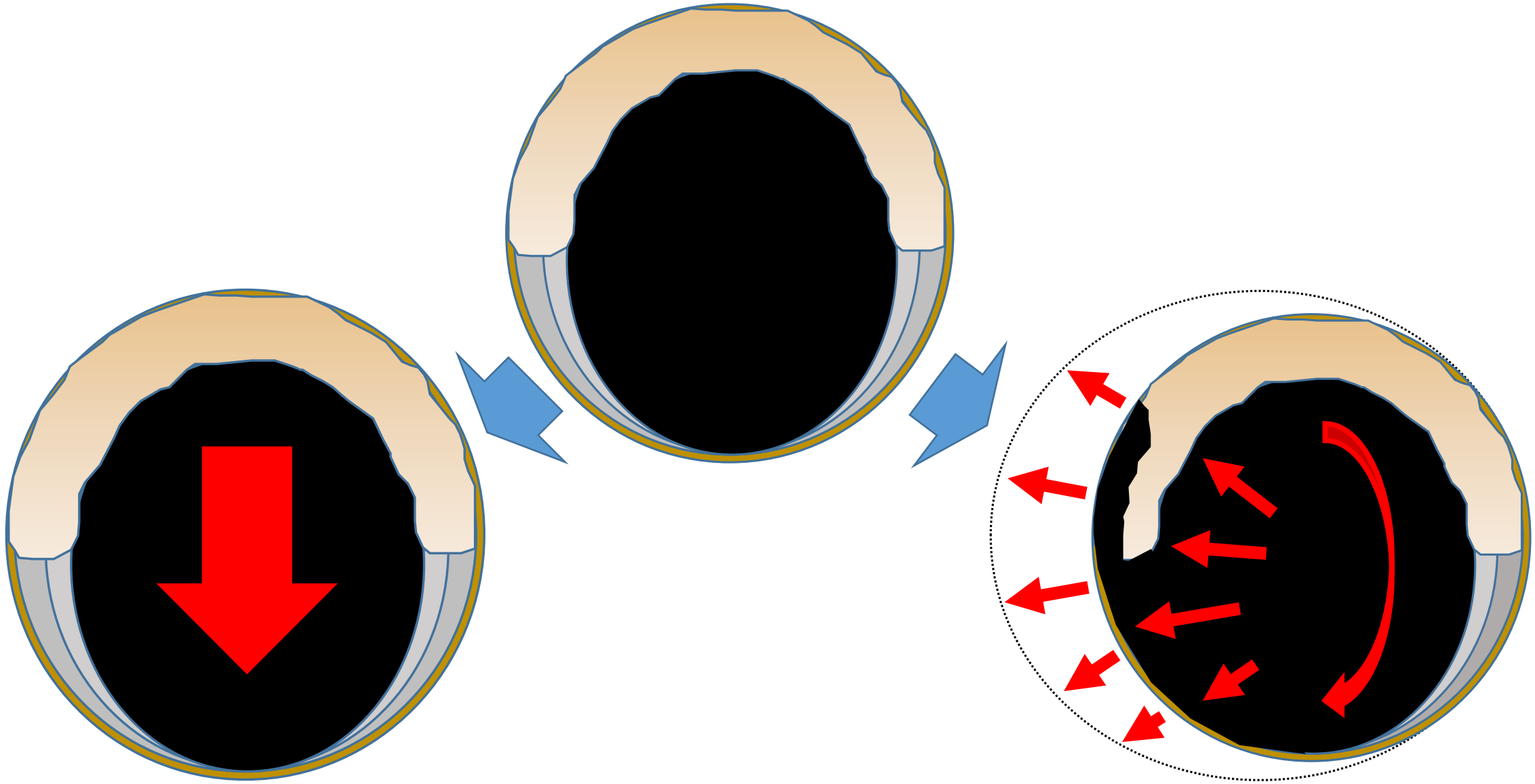

No modification for hard plaque

Modification for hard plaque

Conclsion

- All our coronary rupture cases on IVUS or OFDI showed eccentric calcification or fibrous plaque and on the other side no intima plaque.
- For the purpose avoiding coronary rupture,
  it is most likely effective to make adequate modification for hard plaque, for example crack formation or media dissection behind the hard plaque by scoring/cutting balloon dilatation.