Solving problems of current OCT

KODAI

- Problem solution
  - New method OCT with high sensitivity and high dynamic range + Bessel Beam Antenna

    Observable depth 3-9 mm

    (SS-OCT + Gaussian beam: 1-1.5 mm)
  - New method OCT (M-FD-OCT)

    Sensitivity: 150dB-200dB (current SS-OCT: 100dB)

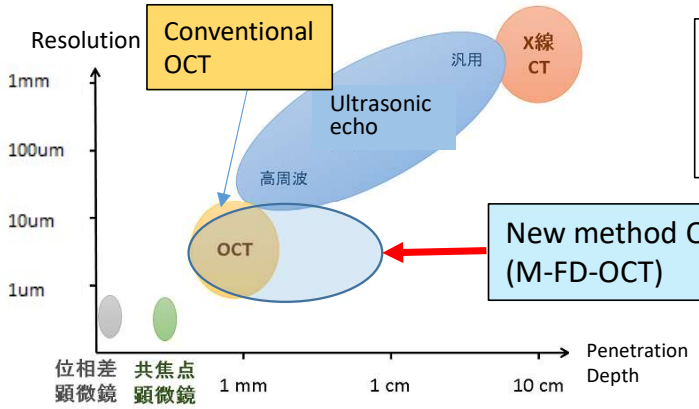
    Dynamic range: 150dB-200dB (current SS-OCT: 60dB)
    - The observable depth is determined by the dynamic range.

    New method OCT depth> 3 or more times SS-OCT depth
  - Bessel beam

    Significant reduction in beam attenuation in blood <<
    <<Gaussian beam attenuation

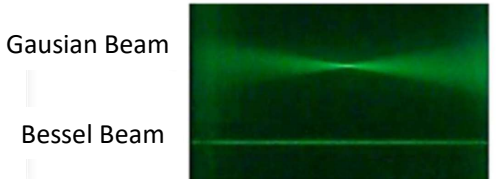
    The beam is thin over the entire section (large depth of field)

Fig. 3 Resolution of various imaging devices vs. penetration depth.



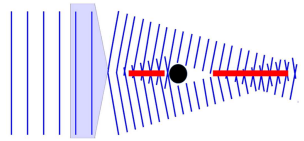
The depth of penetration of the new OCT has increased significantly compared to the current OCT.

Fig.4 Comparison of Gaussian beam and Bessel beam



Comparison of the length of the focused spots of the Gaussian beam and Bessel beam

Fig.5 Bessel beam self-regeneration



The Gaussian beam has a self-renewal function that can regenerate the beam on the back side even if the beam is interrupted by an obstacle.