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**THE DETECTION OF VULNERABLE ATHEROSCLEROTIC PLAQUE RABBIT CAROTID MODELS BY OPTICAL COHERENCE TOMOGRAPHY**

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**Objectives** We sought to test the feasibility of imaging vulnerable atherosclerotic plaque in vivo using optical coherence tomography

(OCT) to assess the value of vulnerable atherosclerotic plaque rabbit model established with a novel way.

**Methods** Thirty Rabbits were randomly divided into two groups: Group A (n=15): Balloon injury of carotid artery followed by high cholesterol diet (HCD) for 12 weeks. Group B (n=15): In this group, a thin filter paper slip saturated with 10% ferric trichloride was lay between paraffin filter paper and common carotid artery infiltrated for 3–5 mins. We analysed OCT data including plaque incidence rate, plaque type and classification, lipid-rich plaque numbers between the two groups. Histopathology logical examination of plaque were also investigated to confirm our findings.

**Results** In each group, plaque were formation at the harvest time. In group A, lipid-rich plaque incidence rate was 76.9%, while group B was 46.2%. CD68 staining for large amount of macrophage verified that two groups had formed advanced atherosclerotic plaque. Furthermore, in group B 60% plaque had the feature of eccentricity which may get much more influence on the endothelial shear stress.

**Conclusions** OCT can accurately detect atherosclerotic lesions in vivo and could guide the design of invasive imaging approaches for detecting vulnerable atherosclerotic plaques. The study demonstrate that both groups can produce atherosclerotic plaque, while we get a better method for inducing the eccentricity atherosclerotic plaque on animal model.