

Conference Abstract

DAY 1 15th September 2023 (Friday)

ORAL 2

3.30-5.00 pm

Scientific Session 6

Collagen and Elastic Fiber Frequency in Tortuous Arteries by Microscopy

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Background: The arteries carry oxygenated blood from the heart towards the peripheral tissues. In order to facilitate this the arteries have a thick tunica media with smooth muscles. This maintains blood pressure and allows pulsatile blood flow to the peripheral tissues. Some of the arteries are tortuous for eg splenic, facial, coronary arteries. The purpose of the tortuosity is extra length within a small distance, which allows stretch of artery in movements of joints close by. The factors that continue to maintain the tortuosity could be in the increase of collagen and elastic fibers in the tunica media. There could also be variations in the collagen and elastic fiber content of the connective tissue around the blood vessel which helps in stretch and recoil.

Aim: To study the collagen and elastic fiber frequency in tortuous arteries by microscopy

Methods: 1-2 cms of facial artery, splenic artery, coronary artery, radial and ulnar artery (5 samples each) was harvested with whole lumen intact from formalin fixed human cadavers. The tissue was cut appropriately and paraffin blocks were made for each specimen. From each of the blocks, slides were prepared. Radial and ulnar arteries served as control. Skin tissue served as control for Vangeison - Verhoeff stain. Each of the sections were stained by VVG special stain and examined for collagen and elastic fiber frequency under the microscopy.

Results: The elastic fiber frequency was more in the tunica media of tortuous than control arteries. However the amount of elastic fiber in surrounding connective tissue was significantly more in tortuous arteries than the control arteries.

Conclusion: The factor responsible for maintaining tortuosity, could be the amount of elastin in tunica media as well as in the surrounding connective tissue which helps in stretch and recoil of arteries.

Keywords: microscopy, tortuous arteries, elastic fibers.