**Multi-Loc:** new technology for stenting femoro-popliteal artery: Proof of concept

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**Introduction:** The idea behind **Multi-Loc** Stenting is:
1. To minimize damage of biomechanical properties of stented arterial segments by reducing biomechanical stress between arterial wall and stent especially in close proximity to joints.
2. This new device should enable an exact anatomically controlled release of single (1 to 12) short (10-18 mm in length) stents (spot stenting) without watermelon seeding effect.
3. To achieve a reduction of fractures and lumen loss in the stented segment by myo-intimal hyperplasia.
4. At least to optimize cost effectiveness, multiple femoro-popliteal segments can be stented with only one device.

**Method:** After permission by ethical committee, implantation of up to five **Multi-Loc** individual short stent segments (13mm long) into the left femoral arteries of 6 domestic pigs. As a control, long (60 to 80 mm) commercially available helical stents were implanted into the artery of contralateral side. After 4 weeks survival under medication with clopidogrel (75mg/d), control angiography was performed, the animals were sacrificed and histological (HE-staining) evaluation of the stented arterial segments was performed (→).

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**Results:** There was no fracture of **Multi-Loc** stents compared to 3 out of 6 fractured control stents. Occlusion of the femoro-popliteal axis was observed in one control limb, distal to the stented segment. Length and degree of stenosis in the **Multi-Loc** stented arterial segments were significantly lower compared to control (custom length stent).

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**Conclusion:**
1. Animal experiments show technical feasibility of the multi stent delivery system (MSDS): **Multi-Loc**.
2. Exact anatomically controlled implantation of short stents is possible.
3. Short stents in actively bended arterial segments do not fracture (0 vs 5).
4. Patency of arterial segments after stenting with 4-5 short individual stents is superior to single long stent implantation in all animals.