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PERFORMANCE TEST AND EXPERIMENTAL STUDY OF SPECIAL STENT FOR TREATMENT OF ILIAC VEIN STENOSIS

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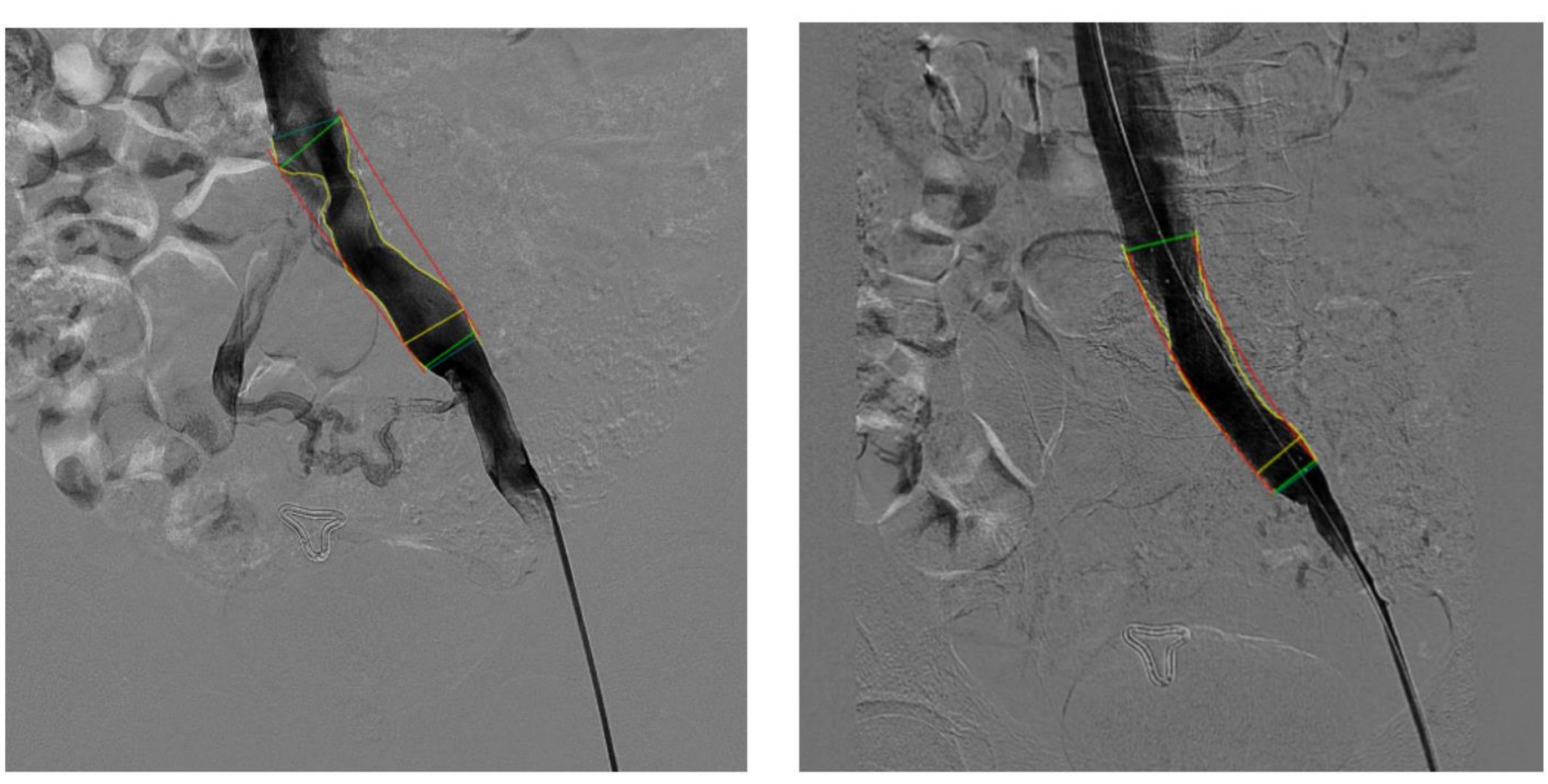
ABSTRCAT:**Objective**: Animal experiments and clinical trials were carried out to evaluate the efficiency of a new stent for the treatment of iliac vein stenosis. **Methods:** The new iliac vein stent and the control stent were implanted, respectively, into the 12 experimental pigs. Digital Subtraction Angiography was done separately at the same day, 14th, 30th, 60th and 90th day after stent implantation to observe the stent deployment. One patient was implanted with a new iliac vein
stent. Digital subtraction angiography (DSA) was done after the operation to calculate the lumen loss value and lumen loss rate of the stent and evaluate the performance of the new iliac vein stent at 12 months of follow-up. **Results:** The mechanical experiment and finite element analysis of the stent proved that the radial support force of the new stent is significantly better than that of the control stent. In animal experimental verification, both groups of stent were released satisfactorily
during implantation. No obvious stent displacement was found at each time point. The patency rate of stents was 100%. Except for a small amount of old thrombosis in the stent in the control group, no other stents were found in that condition. The diameter of the stent lumen was retracted in different degrees in both groups after the operation, but no significant statistical difference was found in the comparison of the stent lumen loss rate at each relative inspection day. **Conclusion:** The new nickel-titanium alloy iliac vein stent has excellent radial support performance, which may be an ideal iliac vein stent.

Keywords: Animal experiments; mechanical properties; iliac vein stent; clinical trials.



The DSA comparison image before and one year after iliac vein stent implantation

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