Short- and Mid-Term Changes in the True and False Lumina Diameters Following Endovascular Treatment of Type B dissections

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Background:
Blood pressure in the false lumen (FL) of type B aortic dissection (TBD) should rapidly decrease after the implantation of the tubular stent graft (SG) into the true lumen (TL). Our aim was to document TL and FL diameters within the visceral aortic segment during short-term and mid-term follow-up after the endovascular procedure.

Methods:
From 2004 to 2015 we followed-up 52 patients with TBD, who underwent SG implantation. TL and FL diameters were measured at four levels: above the coeliac trunc (L1), between the coeliac trunc and superior mesenteric artery (L2), between the superior mesenteric artery and the renal arteries (L3) and just distal to renal arteries (L4). The measurements were performed 1 and 6 months after SG implantations.

Results:
The primary entry was successfully sealed in all the study subjects. Significant widening of the TL within the extent of SG was recorded in all the subjects, however, the FL did not completely disappear in 5 (11%) patients. FL was completely occluded down to the coeliac trunk (L1) within one month in 15 (35%) and within 6 months in 29 (67%) subjects. TL continued to expand at all the measured levels. The most significant TL expansion was recorded at L1 during the first month.

Conclusion:
At the end of the follow-up, TL completely expanded within the SG length in 91% of patients. TL expanded at all the measured visceral levels, most significantly during the first postimplantation month. TL expansion and FL narrowing proceeded over the whole follow-up.