Venous Hypertension in Chronic Venous Insufficiency

25th World Congress of the International Union of Angiology
Prague - Tuesday, July 3 2012
Purpose

Venous pressure measurement currently is only feasible using an invasive approach with puncture of a dorsal foot vein (ambulatory venous pressure measurement, AVPM).

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To investigate non-invasively the changes in peripheral venous pressure (PVP)
- during Valsalva maneuvers
- in patients with complete insufficiency of the great saphenous vein (Hach IV)
- compared to healthy controls.
Material and Methods

Controlled compression ultrasound (CCU) was used for measurement of PVP of the distal saphenous vein. A pressure manometer displays the pressure needed to compress the vein completely. PVP was measured in supine position at rest and during a standardized Valsalva maneuvers.
Subjects

20 healthy controls
(12 male, 8 female), mean age 30 years (18-64)

19 patients
with at least one Hach IV leg (13 male, 6 female), mean age
53 years (24-75) were included.

40 control legs were compared with 25 Hach IV legs.
Results
Conclusions

In this first study using CCU for PPV measurement of the great saphenous vein it was possible to detect venous hypertension during Valsalva maneuver in Hach IV patients. A cut-off during Valsalva of 30 cmH$_2$O may be a good value to detect venous insufficiency. PVP measurement using CCU is feasible and a valuable tool to investigate venous hypertension in venous valve insufficiency non-invasively.
Thank you for your attention…