“Blush at first sight”; CT and Angiographic Discrepancy in Patients with Blunt Abdominal Trauma

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Background
Blush indicates the leaking of contrast medium from vessels, appearing as a localized or diffuse high density region on the CT scan, often regarded as evidence of active bleeding or vascular injury. Current EAST guidelines recommend Angiography with embolization should be considered in a hemodynamically stable patient with evidence of active extravasation.

Hypothesis
Not all patients with vascular contrast extravasation noted on CT in the setting of Blunt Abdominal trauma exhibit contrast extravasation on Angiography. The purpose of this study was to review our experience of this discrepancy and to propose management strategies.

Methods
We conducted a retrospective analysis of patients who received catheter angiography due to CT Blush after blunt torso trauma at a level I trauma center (June 2005 to July 2013). Patient data abstracted included demographic data, injury mechanism, Injury Severity Score, vital signs and laboratory data obtained in the emergency department, CT and angiography results, embolization status, rebleeding and outcome.

Results
During the study period, 139 patients underwent angiography due to Blush (Total 148 Organ systems with CT Blush). Contrast extravasation was divided by Organ system (Spleen vs Liver vs Renal vs Pelvic). The Negative Angiography rate was approx. 23%. The liver had the highest incidence of CT/Angio discrepancy at 43%. Non-selective proximal embolization with negative angiography was performed in spleen injury. Successful treatment without embolization after negative angiography was seen in kidney and pelvic injuries.

Conclusions
No significant differences in HDs were identified as all patients with HD instability are generally not selected for angiography. Aggressive embolization despite the negative angiography should be seriously considered in spleen and liver injuries due to high risk of rebleeding.