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Reference Article: Jones EL, Stovall RT, Jones TS et al. Intra-abdominal injury following blunt trauma becomes clinically apparent within 9 hours. J Trauma Acute Care Surg. 2014;76:1020-1023

Question: Patient

Clinical Bottom Line: It's likely that significant intra-abdominal injury from blunt trauma will be clinically evident within 9 hours – if you can avoid getting a CT scan for that long.

Background: It seems that everyone who rolls in the doors of our trauma bay get a CT scan from head to toe. Liability reasons, poorer physical exam skills, time, efficiency – all these things play a factor in this, certainly. But the practice also exposes patients to large amounts of radiation and to IV contrast which may be damaging to their kidneys. Is it necessary to scan everyone? Is there any evidence to suggest some other management plan? Turns out those serial abdominal exams may be useful once again.

Methods/Results: Retrospective review of 285 blunt trauma patients at a Level 1 trauma center with intra-abdominal injury. Average age 17 years, 68% of patients were male, mean ISS was 21. 27% of the patients required surgery, 0.7% required radiographic embolization. All of these patients had some sign or symptom of their intra-abdominal injury, leading to imaging or intervention, by 8 hours 25 minutes. Of these patients, everyone with a significant enough injury to require intervention was demonstrating signs/symptoms by 60 minutes.

Discussion: This was a retrospective study, and a relatively small study, with less than 300 patients. The time required to wait, the logistics of having someone from the surgical or ER service re-evaluate these patients (and making sure it happens frequently enough), the lack of clinical experience in performing this kind of on-going assessment may all be reasons that this approach is not practical. Additionally, it would be helpful to look at the concurrent use of other adjuncts such as labs and other imaging (ultrasound, eg). Still, it's nice to have a rough time frame – if you do decide not to CT someone, you may only need to hang on to them for an hour to be sure they have no surgically significant intra-abdominal injuries. Would need to see further, larger studies though before I change my practice.
