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Blunt hollow viscus perforations due to abdominal contusions: diagnostic particularities and prognostic factors for death

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Abstract
Blunt hollow viscus perforations (HVP) due to abdominal contusions (AC), although rare, are difficult to diagnose early and are associated with a high mortality.
Materials and methods: Our paper analyses retrospectively data from patients operated for HVP between January 2005 and January 2009, the efficiency of different diagnostic tools, mortality and prognostic factors for death.
Results: There were 62 patients operated for HVP, 14 of which had isolated abdominal contusion and 48 were poly trauma patients. There were 9 women and 53 men, the mean age was 41.5 years (SD: +17,9), the mean ISS was 32.94 (SD: +15,94), 23 patients had associated solid viscus injuries (SVI). Clinical examination was irelevant for 16 of the 62 patients, abdominal Xray was false negative for 30 out of 35 patients and abdominal ultrasound was false negative for 16 out of 60 patients. Abdominal CT was initially false negative for 7 out of 38 patients: for 4 of them the abdominal CT was repeated and was positive for HVP, for 3 patients a diagnostic laparoscopy was performed. Direct signs for HVP on abdominal CT were present for 3 out of 38 patients. Diagnostic laparoscopy was performed for 7 patients with suspicion for HVP, and was positive for 6 of them and false negative for a patient with a duodenal perforation. Single organ perforations were present in 55 cases, multi organ perforations were present in 7 cases. There were 15 deaths (15.2%), most of them caused by haemodynamic instability (3 out of 6 patients) and associated lesions: SOL for 9 out of 23 cases, pelvic fracture (PF) for 6 out of 14 patients, craniocerebral trauma (CCT) for 12 out of 33 patients. Multivariate analysis showed that the prognostic factors for death were ISS value (p=0,023) and associated CCT (odds ratio=4,95; p=0,017). The following factors were not confirmed as prognostic factors for death: age, haemodynamic instability, associated SVI, thoracic trauma (TT), pelvic fractures (PF), limbs fractures (LF) and admission-operation interval under 6 hours.
Conclusions: Hollow viscus perforations due to abdominal contusions have a high mortality, early diagnosis is difficult, repeated abdominal CT and the selective use of diagnostic laparoscopy for haemodynamic stable patients with ambiguous clinical examination and diagnostic imaging are salutary. Prognostic factors for death were the ISS value and associated craniocerebral trauma.
Key words: blunt hallow viscus injuries, diagnostic, laparoscopy, mortality

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