SPECIFICITIES AND NEW TRENDS

• Delayed bowel perforations
• Quinary type of lesions
• Asphyxiation from fuel-air bombs
• Organic contamination
• Biological contamination
• Chemical warfare
DELAYED BOWEL PERFORATIONS


• 32 patient injured by underwater blast > 24 underwent laparotomy. 1 showed subserosal haematoma without perforation. One week later deterioration of clinical conditions and at re-laparotomy multiple intestinal perforations.
DELAYED BOWEL PERFORATIONS


• Case 1: 19 Y male, ER 20 minutes after blast, fully alert and haemodinamically stable. Abdomen soft, normal peristalsis, no tenderness. 20 hours after admission abdominal pain and signs of peritoneal irritation. Laparotomy: 8 cm haematoma of distal ileum with several small perforations.

• Case 2: 20 Y male, ER 35 minutes after blast, fully alert and haemodinamically stable. Abdomen soft, no tenderness. 24 H after admission abdomen soft and normal peristalsis > fluids by mouth. 48 H after admission abdominal pain, tenderness, peritoneal irritation. X-rays=free air. Laparotomy: 10 cm haematoma of distal ileum with several perforations in the middle.
DELAYED BOWEL PERFORATIONS


• Experimental studies:
  • Cripps and Cooper, Risk of late perforations in intestinal contusions caused by explosive blasts. Br J Surg 1997, 84: 1298-1303. > 16% of small bowel and 12% of large bowel at high risk for late perforations
DELAYED BOWEL PERFORATIONS

Management:

• Observation for 48h (Paran, 1996)

• Excision/repair (Cripps and Cooper, 1997) if > 15mm or covering more than 50% circumference on small bowel and > 20 mm or confluent on large bowel
QUINARY TYPE OF BLAST LESION

• Article from Kluger et al 2006.

• Related to PETN (pentaeritritoltetranitrate)?

• Characterized by a systemic hyperinflammatory response without associated lesions that can explain it.

• Signs are: tachycardia, fever, low central venous pressure, increased fluid requirements to maintain an adequate tissue perfusion.
ORGANIC CONTAMINATION

• Animals (donkeys, horses, etc) carrying bags with explosive and caw fecal material (ENL-Colombia, Pakistan).

• Home made antipersonnel landmines containing fecal material and soft wood (Cambodia).
BIOLOGICAL CONTAMINATION FROM OTHER HUMAN BEINGS

• From suicide bomber
• From other victims

• 1 out 32 victims of blast in Israel found with embedded allogenic bone fragment tested positive for Hep B virus (Braveman et al, IMAJ 2002; 4:528-529.)

• 5 out of 194 victims from London blast had allogenic bone fragments (Wong et al, J Trauma 2006; 60: 402-404.)
MANAGEMENT

• Hepatitis B prophylaxis (PEP) (Braverman 2002, CDC Atlanta)

• Hepatitis C testing (CDC Atlanta)

• HIV prophylaxis (PEP) in selected cases (CDC Atlanta)