

INTRAPERITONEAL USE OF REACTIVE OXYGEN SPECIES (ROS)

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This case report describes the intraperitoneal use of a novel antimicrobial agent: Surgihoney®. The ROS hydrogen peroxide in Surgihoney® exhibits antimicrobial action by a reaction with thiol groups in enzymes, proteins, DNA and bacterial cell membranes. It is highly antimicrobial against gram positive and negative bacteria, viruses and fungi and breaks down biofilms. Seventeen-year-old patient with background of severe autism with minimal verbal communication presented with abdominal sepsis due to ruptured appendix. The medical management in the intensive care included the following: (1) early sedation, intubation and ventilation to safely control severe agitation status due to his autism and to allow medical interventions, (2) laparotomy, appendectomy, abdominal washout and drain insertion for perforated appendix and four quadrant peritonitis, (3) broad-spectrum IV (intravenous) antibiotics and (4) IV fluid resuscitation and TPN (Total parenteral nutrition). On postoperative day six an increased abdominal drain output was noted and the patient became more septic despite continuing broad-spectrum IV antibiotics. An abdominal CT

(computed tomography) scan confirmed small bowel leak with the abdominal drain tip appropriately positioned proximal to the leak site. Due to the patient's past medical history of severe autism and agitation, surgical intervention and stoma formation was not feasible option. A multidisciplinary team decision was made to treat the patient conservatively with continuous drainage and daily intraperitoneal Surgihoney® injection (100g/day diluted with 100ml warm sterile 0.9% NaCl solution) via the abdominal drain. The drain was clamped for one hour after injection. Recovery from abdominal sepsis was quick after Surgihoney® initiation, which was confirmed by trending down CRP (C- reactive protein), WCC (white cell count) and procalcitonin levels, cessation of abdominal drain output, return of normal bowel function and apyrexia. Surgihoney® is an extremely promising agent in intra-abdominal surgery where there has been peritoneal contamination. Written consent was obtained from patient's mother for abstract writing and publication.

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