(2) A 72-year-old woman with a past history of peripheral vascular disease, hypertension and hypercholesterolaemia, presented with reflux symptoms. Endoscopy shows a 6 cm area of Barrett’s oesophagus. This is confirmed by expert pathology to be intestinal metaplasia with low grade dysplasia. She is started on high dose of proton pump inhibitor. Following repeat endoscopy, the second set of biopsies confirms the presence of a Barrett’s oesophagus with low grade dysplasia.

(3) A 46-year-old man presented with a 15-year history of reflux. He is on 40 mg of pantoprazole twice daily with poor symptom control. He has no significant co-morbidities.

(4) A 70-year-old woman presented with symptoms of reflux. Her past history is significant for chronic obstructive pulmonary disease limiting her to walking distance to less than 400 m, ischaemic heart disease (on aspirin and clopidogrel) and she is an ex-smoker. At endoscopy, she has 7 cm Barrett’s oesophagus with high grade dysplasia, confirmed by two separate expert pathologists.

Recovery after abdominal surgery: the peritoneum may be a key therapeutic target

Abdominal surgery may be necessary for benign or malignant processes but long-term advantages are preceded by an initial period of morbidity and prolonged convalescence. A major part of this recovery process, as experienced by the individual, is a persisting feeling of malaise and tiredness and is termed post-surgical fatigue (PSF). It has been shown to be among the most prominent symptoms after abdominal surgery and may persist for up to 3 months. PSF is known to delay return to work and regular activities and thus causes functional impairment of consequence to patients. This magnitude and duration of this morbidity is at least partially dependent on the peritoneum.

The peritoneum is a mesothelial cell layer lining the abdominal cavity. The concept of considering the peritoneum as an organ itself has been slow to gain traction in much the same way that skin or endothelium were discarded several decades ago as no more than inert coverings. The peritoneum is, however, of prime metabolic and immunological importance. Previous work has shown that injury to the abdomen results in disproportionately higher inflammatory responses than a similar magnitude of injury to the extremities. Experimental models of transperitoneal surgery have also demonstrated a profound inflammatory response activated by the peritoneum in a coordinated fashion beyond the local area of injury.

It is known that the peritoneum responds to physiological insults through a complex array of immunologic and inflammatory cascades. This response increases with the duration and extent of injury and is central to the concept of surgical stress, manifesting via a combination of systemic effects and local neural pathways via the neuroimmunohumoral axis. Interventions in animal and human models have demonstrated the importance of these pathways. The abdominal vagus nerve carries afferent information from the peritoneum and vagotomy in murine models blunts the intraperitoneal response to induced inflammation while in humans, blockade of vagal afferents via intraperitoneal local anaesthetic improves recovery after abdominal surgery.

Paddison et al. measured peritoneal fluid cytokine concentrations in patients after abdominal surgery and found a significant positive correlation between peritoneal interleukin (IL)-6, IL-10 and tumour necrosis factor alpha and PSF scores after controlling for demographic variables, comorbidity and presurgery fatigue using linear mixed modelling. Furthermore, a double-blinded randomized trial of preoperative corticosteroid administration demonstrated that a reduction in PSF after colonic surgery correlated with a significant decrease in local peritoneal cytokine levels. It is also interesting to note that interventions that have only minimized external skin trauma without decreasing peritoneal inflammation, such as laparoscopic colorectal surgery, have only had a minimal impact on reducing PSF or improving outcomes after abdominal surgery.

The length of time for peritoneal inflammation to settle and PSF to diminish parallel each other. Any reoperation between 10 days and 6 weeks (the time for PSF to resolve) after the primary trauma is inadvisable as the intestines are tangled together in an inflammatory, friable mass due to peritoneal adhesions and are easily prone to tearing and creating fistulae. Thus, as a metabolically active layer covering abdominal organs, the peritoneum represents a logical target for interventions aimed at improving outcomes from abdominal surgery and a renewed appreciation of its physiological importance is necessary.

References


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