Intra-abdominal Abscesses

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“Signs of pus somewhere, signs of pus nowhere else, signs of pus there – under the diaphragm”. This was 100% true when I was a student, 50% true when I was a resident. Today it is irrelevant . . .

The contents of this chapter could have been summarized in a sentence: an abscess is a pus-containing, confined structure, which requires drainage by whatever means available. We believe, however, that you want us to elaborate.

Abscesses may develop anywhere within the abdomen, resulting from myriad conditions. Specific types such as diverticular or peri-appendicular abscesses (Chaps. 26 and 28) are covered elsewhere in this book; this chapter will introduce you to general concepts – with emphasis on what is probably the commonest abscess in your practice – the postoperative abscess.

Definition and Significance

Erroneously, the term intra-abdominal abscess has been and still is used as a synonym for secondary peritonitis (Chap. 12). This is not true as abscesses develop as a result of effective host defenses and represent a relatively successful outcome of peritonitis.

To be termed an abscess, the confined structure has to be walled off by an inflammatory wall and possess a viscous interior. In contrast, free flowing, contaminated or infected peritoneal fluid or loculated collections, which are deprived of a wall, represent a phase in the spectrum/continuum of peritoneal contamination/infection and not an abscess.

Classification and Pathogenesis

The myriad forms of intra-abdominal abscesses makes their classification complex (Table 44.1), but practically, abscesses are visceral (e.g. hepatic or splenic) or non-visceral (e.g. subphrenic, pelvic), intraperitoneal or extraperitoneal. Non-visceral abscesses arise following the resolution of diffuse peritonitis during which
loculated areas of infection and suppuration are “walled off” and persist; or arise after a perforation of a viscus, which is effectively localized by peritoneal defenses. Visceral abscesses are caused by hematogenous or lymphatic dissemination of bacteria to a parenchymatous viscus. Retroperitoneal abscesses may result from perforation of a hollow viscus into the retroperitoneum as well as by hematogenous or lymphatic spread. Another distinction is between the postoperative abscess – for the development of which we surgeons feel responsible – and spontaneous abscesses, unassociated with a previous operation. A further clinically significant separation is between simple abscesses and complex abscesses, (e.g. multiple, multiloculated ones, associated with tissue necrosis, enteric communication or tumor), which require a more aggressive therapy and carry a poorer prognosis. The anatomical classification, based on the specific anatomical location of an abscess – which typically develops in one of the few constant potential spaces – has diminished in significance since the advent of readily available modern imaging and percutaneous drainage techniques.

Note that abscesses signify an intermediate natural outcome of contamination/infection. At one end of the spectrum infection persists, spreads and kills; at the other, the process is entirely cleared by host defenses – assisted by your therapy. Abscesses lie in no-man’s land, where the peritoneal defenses are only partially effective – being disturbed by an overwhelming number of bacteria, micro-environmental hypoxemia or acidosis, and adjuvants of infection such as necrotic debris, hemoglobin, fibrin and barium sulfate. An abdominal abscess won’t kill your

Table 44.1. Classification of abdominal abscesses

<table>
<thead>
<tr>
<th>Classification</th>
<th>Examples</th>
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<tbody>
<tr>
<td>Visceral vs non-visceral Primary vs secondary Spontaneous vs postoperative Intra-peritoneal vs retroperitoneal Simple vs complex</td>
<td>Hepatic vs subphrenic Splenic vs appendiceal Diverticular vs peri-anastomotic Tubo-ovarian vs psoas Complex: Multiple (liver) Multiloculated Communication with bowel (leaking anastomosis) Associated with necrotic tissue (pancreatic) Associated with cancer</td>
</tr>
<tr>
<td>Anatomical</td>
<td>Subphrenic, subhepatic, lesser sac, paracolic, pelvic, interloop, peri-nephric, psoas</td>
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