TUBERCULOSIS OF THE GASTROINTESTINAL TRACT
PATHOGENESIS

- *Mycobacterium tuberculosis*
- The usual route of infection is direct penetration of the intestinal mucosa by swallowed organisms.
- Pulmonary involvement is seen in less than 50% of patients with intestinal tuberculosis
CLASSIFICATION AND DISTRIBUTION OF DISEASE

• Most common site: ileocaecal region
• Peritoneal tuberculosis occurs in three forms:
  • **Wet type** with ascites
  • **Dry type** with adhesions
  • **Fibrotic type** with omental thickening and loculated ascites
PATHOLOGY

• **Ulcerative** 60%
• **Hypertrophic** 10%
• **Ulcerohypertrophic** 30%
• Bowel wall appears thickened, and there typically is an inflammatory mass surrounding the ileocecal region.

• The serosal surface is covered with multiple tubercles.

• The mesenteric lymph nodes typically are enlarged and thickened
• The mucosa itself is hyperemic, cobblestoned, edematous, and, in some cases, ulcerated.
• In contrast to Crohn's disease, the ulcers tend to be circumferential and perpendicular to the longitudinal axis of the bowel.
• When these ulcers heal, the associated fibrosis causes stricture and stenosis of the lumen.
• Histologically, the distinguishing lesion is a caseating granuloma
Diagnosis

• Ascitic fluid examination
• Straw coloured fluid
• High protein
  SAAG < 1.1 g/dl
  Predominantly lymphocytic cells
  ADA levels above 36 U/l
Diagnosis

- Chest X-rays: concomitant pulmonary lesions in less than 25%
- Small bowel barium meal, barium enema
- Ultrasonography, computed tomographic scan
- Colonoscopy
- Laparoscopy
TREATMENT

- Standard antituberculosis treatment
Surgery

- Hypertrophic form
- Luminal compromise with complete obstruction
- Free perforation,
- Confined perforation with abscess formation
- Massive hemorrhage
Food Poisoning
FOOD POISONING

• An illness caused by the consumption of food
• Contaminated with bacteria, bacterial toxins, parasites (e.g., trichinosis), viruses (e.g., hepatitis), or chemicals (e.g., amanitin with ingestion of mushrooms)
• Bacteria constitutes 75% of the outbreaks
## Features of Bacterial Food Poisoning

<table>
<thead>
<tr>
<th>ORGANISM</th>
<th>COMMON VEHICLES</th>
<th>INCUBATION (Hrs)</th>
<th>PRIMARY TOXIN</th>
<th>MEDIAN DURATION (Days)</th>
<th>SECON DARY ATTACK RATE,%</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Bacillus cereus</strong></td>
<td>Fried rice</td>
<td>2 (1-16)</td>
<td>Heat stable</td>
<td>0.4 (0.2-0.5)</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>9 (6-14)</td>
<td>Heat labile</td>
<td>1 (1-2)</td>
<td></td>
</tr>
<tr>
<td><strong>Escherichia coli spp</strong></td>
<td>Salads, beef</td>
<td>24 (8-44)</td>
<td>Heat labile</td>
<td>3 (1-4)</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>96 (24-120)</td>
<td></td>
</tr>
<tr>
<td><strong>Salmonella spp</strong></td>
<td>Eggs, meat, poultry</td>
<td>24 (5-72)</td>
<td>Role of toxin unclear</td>
<td>3 (0.5-14)</td>
<td>30-50</td>
</tr>
<tr>
<td><strong>Shigella spp.</strong></td>
<td>Milk, salads (potato, tuna, turkey)</td>
<td>24 (7-168)</td>
<td>Role of toxin unclear</td>
<td>3 (0.5-14)</td>
<td>40-60</td>
</tr>
<tr>
<td><strong>Staphylococcus aureus</strong></td>
<td>Ham, pork, canned beef, cream-filled pastry</td>
<td>3 (1-6)</td>
<td>Heat stable</td>
<td>1 (0.3-1.5)</td>
<td>0</td>
</tr>
<tr>
<td><strong>Campylobacter jejuni</strong></td>
<td>Milk, chicken, beef</td>
<td>48 (24-240)</td>
<td>Unknown</td>
<td>7 (2-30)</td>
<td>25</td>
</tr>
<tr>
<td><strong>Clostridium perfringens</strong></td>
<td>Beef, turkey, chicken</td>
<td>12 (8-22)</td>
<td>Heat labile</td>
<td>1 (0.3-3)</td>
<td>0</td>
</tr>
</tbody>
</table>
BOTULISM

• Epidemiology:
  • Least common form of botulism
  • Preformed toxin

• Pathogenic Mechanisms:
  • Seven serologically distinct botulinum toxins
  • Types A, B, and E are responsible for most human cases
• After absorption, botulinum toxin binds irreversibly to presynaptic cholinergic nerve endings of the cranial and peripheral nerves
• Inhibition of the release of acetylcholine
• Characteristic clinical syndrome
Clinical Features

- Initially (usually within 18 to 36 hours) gastrointestinal symptoms, including nausea, vomiting, abdominal pain, and diarrhea.
- Once neurologic symptoms develop, constipation is common.
- Dry mouth, diplopia, and blurred vision are followed by dysarthria, dysphonia, dysphagia, and peripheral muscle weakness.
- The typical symmetrical descending paralysis.
- Respiratory muscle paralysis can result in respiratory failure and death.
- Higher cortical functions are unaffected.
Diagnosis

• High index of suspicion
• If food-borne botulism is suspected, stool, serum, and implicated foods should be tested for botulinum neurotoxin
Treatment

- The trivalent equine botulinum antitoxin
- Speed is of the essence
- Single 10-mL dose of intravenous antitoxin