Case report

Polymicrobial multiple intraabdominal infections: A rare complication of colonoscopy in a cirrhotic patient

Syed Amer¹, Syed Hassan², Chetan Mittal²

¹Department of Internal Medicine, Brookdale University Hospital and Medical Center, Brooklyn, New York-11212, USA.
²Department of Internal Medicine, Henry Ford Health System, Detroit, Michigan-48202, USA.

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Abstract

We present a case of a 58 year old male with past medical history of advanced cirrhosis, hepatitis C and alcohol abuse who presented with bacteremia ultimately leading to sepsis following upper GI endoscopy and colonoscopy procedure that was done to evaluate his symptoms of abdominal pain and melena. This case highlights the catastrophic sequelae that might arise following esophagogastroduodenoscopy (EGD) and colonoscopy that are usually considered safe.

Corresponding author

Syed Amer
Department of Internal Medicine, Brookdale University Hospital and Medical Center, Brooklyn, New York-11212, USA.
Phone: +1 718 240 5000
Email: drsyedamer1@gmail.com

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Esophagogastroduodenoscopy (EGD) and colonoscopy are commonly used to evaluate gastrointestinal diseases. While both are deemed relatively safe, complications may arise. Infections following endoscopic procedures are quite rare and when they do arise, they tend to be with a single organism. We present an unusual case of multiple intraabdominal infections, in different organs, each with a different organism, following a colonoscopy and esophagogastroduodenoscopy without obvious complications related to the procedure itself.

Case report

A 58 year old male with a history of advanced cirrhosis secondary to hepatitis C and alcohol abuse, presented with altered mental status, three days following an upper and lower endoscopy done at another facility to evaluate persistent abdominal pain and melena. The endoscopy showed hemorrhoids and minimal gastritis and no interventions were performed. Diagnostic work up upon admission showed elevated white blood cell count. Computed tomograph of the abdomen showed multiple liver abscesses, which were partially drained and grew Streptococcus anginosus and Staphylococcus epidermidis. Blood cultures grew E. coli. His condition gradually deteriorated despite treatment with appropriate antibiotics. Repeat computed tomograph scan 10 days later showed right upper lobe pneumonia, bilateral pleural effusion along with persistent liver abscesses and new ascites. Paracentesis revealed an exudate with WBC count of 8.1 x 10⁹/ L with 94% neutrophils and grew Klebsiella pneumoniae. Antibiotics were adjusted according to sensitivities. Despite aggressive treatment, his condition continued to deteriorate and he finally died of severe sepsis and multi-organ dysfunction.

Discussion

Endoscopic procedures many a times involve a lot of cutting, burning and puncturing of bacteria laden mucosa, usually in older and immunocompromised
patients. Inspite of this, complications such as infections are extremely rare sequelae of gastrointestinal endoscopic procedures. There is a wide variation in the rate of bacteremia after various endoscopic procedures (Table 1). Actual infectious complications are uncommon for most procedures, probably due to the competence of the gastrointestinal immune system in addition to effective endoscopic disinfection practices. They occur predominantly following interventional procedures as shown in the table and are extremely rare following diagnostic procedures.

Table 1: Published rates of bacteremia associated with endoscopic procedures

<table>
<thead>
<tr>
<th>Endoscopic procedure</th>
<th>Rates of bacteremia (%)</th>
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<tbody>
<tr>
<td>Diagnostic endoscopic retro-grade cholangiopancreatography</td>
<td>15&lt;sup&gt;1&lt;/sup&gt;</td>
</tr>
<tr>
<td>Therapeutic endoscopic retro-grade cholangiopancreatography</td>
<td>27&lt;sup&gt;1&lt;/sup&gt;</td>
</tr>
<tr>
<td>Flexible sigmoidoscopy</td>
<td>0-1&lt;sup&gt;2,3&lt;/sup&gt;</td>
</tr>
<tr>
<td>Esophagogastroduodenoscopy</td>
<td>2-15&lt;sup&gt;4,5&lt;/sup&gt;</td>
</tr>
<tr>
<td>Esophageal dilatation</td>
<td>18-45&lt;sup&gt;5&lt;/sup&gt;</td>
</tr>
<tr>
<td>Sclerotherapy</td>
<td>11-16&lt;sup&gt;5&lt;/sup&gt;</td>
</tr>
<tr>
<td>Colonoscopy</td>
<td>4-27&lt;sup&gt;6&lt;/sup&gt;</td>
</tr>
<tr>
<td>Variceal banding</td>
<td>6&lt;sup&gt;7&lt;/sup&gt;</td>
</tr>
</tbody>
</table>

To our knowledge, there have been two cases of bacterial peritonitis following colonoscopy in patients undergoing continuous ambulatory peritoneal dialysis<sup>18,19</sup> and two other instances in patients with cirrhosis and ascites<sup>19,20</sup>. Septicemia has been reported in only four cases after Colonoscopy. These include two patients with cirrhosis and ulcerative colitis who developed gram negative septicemia<sup>22</sup>; a patient who underwent splenectomy and was taking corticosteroids developed septicemia with Flavobacterium meningosepticum and Escherichia coli<sup>15</sup>; and Listeria in a patient being treated with ACTH for ulcerative colitis<sup>16</sup>.

Patients with cirrhosis have a higher rate of infectious complications, likely due to decreased complement levels, impaired neutrophil chemotaxis, lymphocyte dysfunction and immunoglobulin dysfunction, combined with portal hypertensive coagulopathy due to venous congestion.

Conclusion

In summary, infectious complications following endoscopies are rare, but when the occur they can be severe and life threatening in immunocompromised patients

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References