**Abstract:**

*Listeria monocytogenes* can cause gastrointestinal infections in healthy children and adults, but they tend to be mild and self-limiting. It can, however, cause serious potentially lethal infections, such as meningitis and bacteremia, to those with underlying conditions. A woman in her 60s with liver cirrhosis developed abdominal pain and a fever, and she turned out to have a perianal abscess caused by *L. monocytogenes*. Perianal abscess is a rare complication of *L. monocytogenes*, but a recent epidemiological study revealed that the presence of cirrhosis might also be a risk factor for the development of invasive disease.

**Key words:** Perianal abscess, *Listeria monocytogenes*, Pathophysiology

(Intern Med Advance Publication)

(DOI: 10.2169/internalmedicine.7755-21)

**Introduction**

*L. monocytogenes* is a facultative anaerobe characterized by Gram-positive rods with rounded edges. It was first described in 1926 as the cause of an outbreak among laboratory animals and was first recognized as a human pathogen in 1929 (1). For healthy children and adults, it causes relatively nonsevere gastrointestinal diseases that are usually self-limiting. However, it characteristically causes severe disease, such as meningitis and bacteremia, among patients with underlying risk factors (2).

Neonates, pregnant women, the elderly, people with human immunodeficiency virus (HIV) infection, and those receiving immunosuppressants, including biological agents, such as tumor necrosis factor (TNF)-alpha inhibitors, are at particular risk of severe infections caused by *L. monocytogenes* (3-7). *L. monocytogenes* can cause focal invasive infections, such as abscesses, but they occur rarely.

We herein report a case of perianal abscess caused by this organism in a patient with cirrhosis.

**Case Report**

A woman in her 60s with a medical history of cirrhosis and treated hepatocellular carcinoma caused by non-alcoholic steatohepatitis complicated by esophageal varices, presented to us with a fever, dyspnea, and abdominal pain. Nine days prior to the presentation, the patient started to have abdominal pain with tenesmus. She took an over-the-counter unknown stomach medicine to no avail. One day prior to the presentation, the patient developed a fever and dyspnea. She presented to the emergency department on the following day.

She denied any consumption of unprocessed cheese or uncured ham, but she admitted to eating uncooked vegetables and strawberries on a regular basis. She denied travel abroad, and none of her family members had similar symptoms.

On a physical examination, she appeared ill generally. Her blood pressure was 100/65 mmHg, pulse rate was 100/minute, respiratory rate was not measured, and body temperature was 37.9 °C. Her abdomen was soft, but there was mild abdominal distension that was not tender to touch. No apparent mass or ascites was noted. The rest of the physical...
Focal invasive infections, such as abscess formation, are rare complications of *L. monocytogenes* infection (10). Perianal abscess is even rarer, and we were able to find only several cases of perianal abscess caused by the organism (11-13). Duarte et al. described a patient in Portugal who had diabetes mellitus (11). Chavata et al. presented a case series of *Listeria* infections in Australia, and one out of three patients had perianal abscess, although the details of the case were not shown (12). Carvajal et al. also presented a case series of *Listeria* infections in Denmark, and 2 of the 30 cases had perianal abscess (13). Our report is, as far as our literature search could determine, the first to describe a case occurring in Asia.

Since Gram-staining revealed only a single Gram-positive rod, which turned out to be *L. monocytogenes*, we consider this perianal abscess to be a mono-organism infection rather than an abscess caused by mixed bacteria, although we cannot exclude the possibility that the Gram staining was affected by the history of antimicrobial therapy and was, in fact, polymicrobial infection with false negative staining/culture aside from *Listeria*. We are not sure why the patient had pleural effusion, which was transudate, but it might have been associated with his underlying liver cirrhosis.

Why did the patient develop such a rare disease? We identified uncooked food as a potential source of transmission, although there was no apparent outbreak surrounding the patient. Since *L. monocytogenes* does not tend to cause diseases among healthy immunocompetent people, a large number of outbreaks often seen in foodborne diseases caused by other pathogens are less likely to occur. Once ingested, a certain proportion of the organism can pass through the stomach and duodenum and can reach the intestinal wall. It can then invade both phagocytic and nonphagocytic cells. As an intracellular organism, *L. monocytogenes* can move from one cell to another by avoiding the extracellular microenvironment (2).

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with invasive diseases, such as HIV infection or cellular immunity impairment, and was not a neonate or pregnant (2), and her age being in her 60s was marginally a potential risk factor to develop the disease, the patient’s liver cirrhosis may have contributed to the development of this rather rare focal invasive condition, although she may have had other risk factors that we were not able to identify [Sorry: please clarify the meaning of the highlighted text]. The presence of portal hypertension suggested to be present by her esophageal varices may have increased the risk of extraintestinal invasion of the organism (15).

In conclusion, we reported a rare form of perianal abscess caused by *L. monocytogenes*. The presence of cirrhosis may have contributed to the development of this condition.

The authors state that they have no Conflict of Interest (COI).

Acknowledgments
None

ICMJE statement
Contributors MF, NM, and KI were responsible for drafting the manuscript. TW and MF took part in the care of the patient and discussed the issue. SO contributed to laboratory analysis of the patient. All authors contributed to the writing of the final manuscript.

References

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