



Case illustrated

## *Streptococcus bovis* as a cause of uncontrollable colon bleeding

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### ARTICLE INFO

#### Keywords:

*Streptococcus bovis*  
Digestive hemorrhage  
Sepsis  
Discitis  
Hemicolectomy

### Case illustrated

The patient was a 77-year-old man with a history of diabetes mellitus (DM). The patient's main complaints were fever and lumbago. Upon consultation, his vital signs were as follows: Glasgow Coma Scale, E4V5M6; temperature, 39.6 °C; blood pressure, 132/80 mmHg; pulse, 118/min (regular); respirations, 20/min; and percutaneous oxygen saturation on room air (98%). Physical examination revealed backbone tenderness in the lumbar vertebrae.

An image of short TI inversion recovery (STIR) on magnetic resonance imaging (MRI) of the lumbar vertebra revealed a signal increase from L3 to L5 (Fig. 1). The blood test results were as follows: white blood cell count, 16,600/ $\mu$ L; white blood cell fractionation (neutrophil count 14,339/ $\mu$ L; lymphocyte count 664/ $\mu$ L); blood sedimentation 60 min value, over 100 mm; and C-reactive protein level, 16.41 mg/dL.

The diagnosis was vertebral discitis, and *S.bovis* was confirmed by blood cultures upon admission. Medical treatment with an antimicrobial agent (ampicillin 2 g four times a day) was administered after hospitalization, and no conspicuous adverse events were observed.

On day 36 of hospitalization, lower digestive tract bleeding was observed. The lower digestive tract endoscopy was thought to be caused by diverticulum bleeding (Fig. 2). However, control of bleeding was impossible, resulting in interventional radiology (IVR) treatment and hemostasis (Fig. 3-1 and 3-2). However, bleeding control was impossible in IVR. Subsequently, the hemorrhage of the digestive tract recurred, and IVR treatment was performed five times, but bleeding could not be controlled. Therefore, surgical treatment (right hemicolectomy) was performed and the cause was thought to be diverticulum



Fig. 1. Short TI inversion recovery (STIR) magnetic resonance imaging (MRI) of the lumbar vertebra shows a signal increase from L3 to L5.

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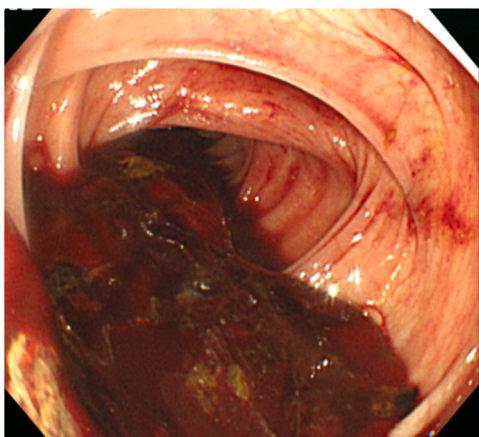


Fig. 2. The lower digestive tract endoscope was suspected to be caused by diverticulum bleeding.



Fig. 3–2. Transcatheter arterial embolization (TAE) with a coil was conducted.



Fig. 3–1. Interventional radiology (IVR) treatment, extravasation from the distal part of the ileocolic artery was detected.



Fig. 4. Ascending colon (200 mm × 110 mm × 25 mm), diverticula occurred frequently and recognized mucosal bleeding signs.

bleeding similar to the lower digestive tract endoscopy (Fig. 4). Subsequently, his clinical course was good, and he was discharged 61 days after hospitalization.

In 1974, Hopes and Lerner reported a case series suggesting a relationship between *S. bovis*, colorectal carcinoma and other gastrointestinal diseases [1]. Many case studies on the association between *S. bovis* and colorectal cancer have been published [2,3]. However, few case studies on the association between gastrointestinal bleeding and *S. bovis* have been published [4]. Furthermore, a case study that became the surgical remedy for uncontrollable colon hemorrhage, like our case, has not yet been published. Furthermore, basic studies on the association between *S. bovis* and gastrointestinal disease have been conducted [5], but the cause is unclear.

The accumulation of similar case reports and progress in the study of further cause pursuit are required in the future.

**Authors’ contributions**

All the authors treated the patients, drafted the manuscript, critically reviewed the manuscript, and approved the final version.

**Consent**

Informed consent was obtained from the patient.

**Funding source**

This study did not receive any specific grants from funding agencies of the public, commercial, and not-for-profit sector.

**Conflict of interest**

None declared.

**Acknowledgments**

We thank the all doctors and staff, Juntendo University Nerima Hospital, for their contribution to treatment.

**References**

- [1] Hoppes WL, Lerner PI. Nonenterococcal group-D streptococcal endocarditis caused by *Streptococcus bovis*. *Ann Intern Med* 1974;81:588–93. <https://doi.org/10.7326/0003-4819-81-5-588>.
- [2] Gold JS, Bayar S, Salem RR. Association of *Streptococcus bovis* bacteremia with colonic neoplasia and extracolonic malignancy. *Arch Surg* 2004;139:760–5. <https://doi.org/10.1001/archsurg.139.7.760>.
- [3] Alvarez A, Garcia CJ, Jia Y, Boman D, Zuckerman MJ. *Streptococcus bovis* bacteremia: association with gastrointestinal and liver disease in a predominantly Hispanic population. *South Med J* 2015;108:425–9. <https://doi.org/10.14423/SMJ.0000000000000310>.
- [4] Gordon MJ, Reynard JS, Duda VR. *Streptococcus bovis* endocarditis presenting with gastrointestinal bleeding. *Gastrointest Endosc* 1985;31:384–6. [https://doi.org/10.1016/s0016-5107\(85\)72254-7](https://doi.org/10.1016/s0016-5107(85)72254-7).
- [5] Facklam RR. Recognition of group D streptococcal species of human origin by biochemical and physiological tests. *Appl Microbiol* 1972;23:1131–9. <https://doi.org/10.1128/am.23.6.1131-1139.1972>.