Approximately 10%–15% of patients treated with nivolumab may develop grade 3/4 immuno-related adverse events (irAEs) [1–3]. Rash and diarrhea are the common irAEs, whereas there have been few reports of nivolumab-related cholangitis and its clinical features [4].

A 69-year-old male patient with advanced lung adenocarcinoma had been treated with nivolumab as third-line chemotherapy. After the third course of nivolumab, he complained of pruritic rash. His laboratory data showed increased liver and biliary tract enzymes. He was treated with oral prednisolone at a dose of 60 mg a day. As his medical condition was not improved by steroid therapy, he was referred to our department.

Computed tomography showed diffuse hypertrophy of extrahepatic bile ducts without any obstruction, such as stones or malignancies (Fig. 1). Endoscopic ultrasonography showed slight dilation of the extrahepatic bile ducts without obstruction (Fig. 2). Endoscopic retrograde cholangiopancreatography showed that the epithelium of the bile duct was irregular and coarse (Fig. 3). After endoscopic sphincterotomy had been performed, peroral cholangioscopy revealed that the epithelium of the extrahepatic bile duct was erosive and bled easily, with many black spots and inflammation, giving a “burned-out” appearance (Video 1).

A biopsy of the lesions of the extrahepatic bile duct showed infiltrating inflammatory cells in the bile duct epithelium (Fig. 5).

As the patient’s liver toxicity worsened despite the treatment with oral prednisolone, intravenous methyl-prednisolone treatment (500 mg/day) was started, but this also failed to improve his condition. He died from nivolumab-related cholangitis 3 months after the start of treatment.

In this case, peroral cholangioscopy showed ulcerative lesions with the “burned-out” epithelium of the extrahepatic bile duct, which was erosive and bled easily. The pathology revealed infiltrating inflammatory cells in the bile duct epithelium, suggesting that the lymphocytes affected by nivolumab might attack the epithelial cells and/or microvessels of the bile duct.

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Competing interests

None

The authors

Naosuke Kuraoka1,2, Kazuo Hara1, Shuji Terai2, Yasushi Yatabe3, Yoshitsugu Horio4
1 Department of Gastroenterology, Aichi Cancer Center Hospital, Nagoya, Japan
2 Department of Gastroenterology and Hepatology, Graduate School of Medical and Dental Sciences, Niigata University, Niigata, Japan
3 Department of Pathology and Molecular Diagnostics, Aichi Cancer Center Hospital, Nagoya, Japan
4 Department of Thoracic Oncology, Aichi Cancer Center Hospital, Nagoya, Japan

Corresponding author

Kazuo Hara, MD, PhD
Department of Gastroenterology, Aichi Cancer Center, Kanokoden, Chikusa-ku, Nagoya, Aichi, 464-8681, Japan
Fax: +81-52-7635233
khara@aichi-cc.jp

References

Video 1 Peroral cholangioscopy of nivolumab-related ulcerative cholangitis.