

CASE IMAGE

Middle-term natural course after acute pancreatitis associated with pancreas divisum

Toshihiko Kakiuchi  | Masato Yoshiura | Rie Furukawa | Masafumi Oka

Department of Pediatrics, Faculty of Medicine, Saga University, Saga, Japan

Correspondence

Toshihiko Kakiuchi, Department of Pediatrics, Faculty of Medicine, Saga University, 5-1-1, Nabeshima, Saga, 849-8501 Japan.

Email: kakiucht@cc.saga-u.ac.jp**Key Clinical Message**

Invasive treatment might be taken into consideration at the time of initial acute pancreatitis in patients with pancreas divisum who do not complain of abdominal pain to prevent progression to chronic pancreatitis.

KEYWORDS

acute pancreatitis, chronic pancreatitis, magnetic resonance cholangiopancreatography, pancreas divisum

1 | CASE DESCRIPTION

A bedridden 17-year-old girl with chromosomal abnormalities [46XX, add (10) (p11.2)] and the psychomotor delay was referred for fever and hypoxemia from home. Owing to her condition she was unable to express her complaints. She had vomited repeatedly the previous day and shows increased sputum production. Despite repeated sputum aspiration for her at home, her oxygen saturation (80%) did not rise above 80%. On admission, she presented with a coarse crackling sound on the right lung side and decreased bowel sounds. Her vital signs were as follows: body temperature, 38.8°C; heart rate, 154 beats per minute; and blood pressure, 195/67 mm Hg. Her blood test results were as follows: white blood cell count, 24,700 cells/mL (normal range [NR]: 7000–15,000); C-reactive protein, 0.79 mg/dL (NR: <0.14); and amylase, 768 IU/L (NR: 37–125). Her chest radiograph showed infiltration in her right lung. According to test results related to the cause of vomiting, acute pancreatitis was diagnosed on the basis of elevated amylase and pancreatic enlargement and perinephric adipose tissue opacity and prenephric fluid accumulation on computed tomography (Figure 1A). Magnetic resonance cholangiopancreatography showed a dominant dorsal

pancreatic duct draining through the minor papilla and a small ventral pancreatic duct draining through the major papilla, which subsequently resulted in the occurrence of pancreas divisum (PD)¹ (Figure 2). Finally, she was diagnosed with aspiration pneumonia owing to vomiting from acute pancreatitis associated with PD. At this time, there were no imaging findings suggestive of acute exacerbation of chronic pancreatitis. Conservative treatment was decided to be performed since it was the first acute pancreatitis episode. Pancreatic stones appeared in the pancreatic duct 1 year later (Figure 1B). Diffuse pancreatic stones were distributed throughout the pancreas and mild atrophic pancreas was observed, resulting in chronic pancreatitis (CP) 2 years later (Figure 1C). The pancreatic stone number increased (Figure 1D), and the pancreatic atrophy progressed (Figure 1E,F) in the third year. Hyperamylasemia was observed thrice during the clinical course, although the abdominal pain presence cannot be determined. Parents' endoscopic therapy consent was not obtained when amylase was elevated. Currently, no hyperglycemia, fatty stools, and low amylase are present.

Invasive PD therapy is reserved for patients with recurrent acute pancreatitis attacks regardless of severity.² Additionally, endoscopic therapy in patients with CP

This is an open access article under the terms of the [Creative Commons Attribution-NonCommercial](https://creativecommons.org/licenses/by-nc/4.0/) License, which permits use, distribution and reproduction in any medium, provided the original work is properly cited and is not used for commercial purposes.

© 2023 The Authors. *Clinical Case Reports* published by John Wiley & Sons Ltd.

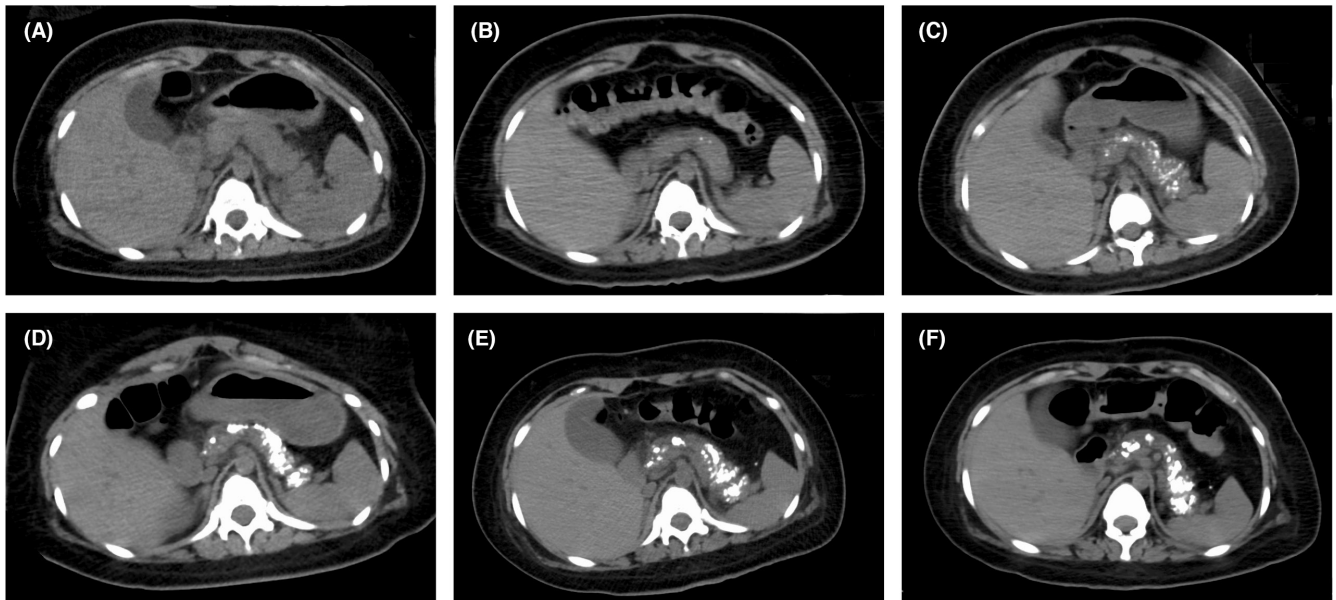


FIGURE 1 Abdominal computed tomography (CT) findings. The first CT finding (A) showed pancreatic swelling, which is the first indication of acute pancreatitis. After 1 year, pancreatic stones appeared in the pancreatic duct (B), and 2 years later, diffuse pancreatic stones distributed throughout the pancreas and mild atrophic pancreas were observed, resulting in chronic pancreatitis (C). In the third year, the number of pancreatic stones increased (D), resulting in pancreatic atrophy progression (E, F).



FIGURE 2 Magnetic resonance cholangiopancreatography (MRCP) findings. MRCP findings showed a dominant dorsal pancreatic duct draining through the minor papilla and a small ventral pancreatic duct draining through the major papilla. As a result, she was diagnosed with pancreatic divisum. Black arrow: ventral pancreatic ducts, White arrows: dorsal pancreatic ducts, red arrowheads: common bile duct.

is reported to have a low response.³ Invasive treatment might be taken into consideration at the time of initial acute pancreatitis in patients with PD who do not complain of abdominal pain to prevent progression to CP.

AUTHOR CONTRIBUTIONS

Toshihiko Kakiuchi: Conceptualization; data curation; formal analysis; investigation; methodology; project administration; validation; writing – original draft; writing – review and editing. **Masato Yoshiura:** Conceptualization; data curation; writing – review and editing. **Rie Furukawa:** Data curation; visualization; writing – review and editing. **Masafumi Oka:** Conceptualization; project administration; supervision; writing – review and editing.

ACKNOWLEDGMENTS

We thank the patient's parents for giving their consent for publication.

FUNDING INFORMATION

The authors have not received any specific grant for this research from any funding agency in the public, commercial, or not-for-profit sectors.

CONFLICT OF INTEREST STATEMENT

None.

DATA AVAILABILITY STATEMENT

All data generated and analyzed during this study are included in the published article.

ETHICS STATEMENT

Written informed consent was obtained from the patient's parents. This report is exempt from ethical approval because it is an observational report after the current care.

CONSENT STATEMENT

Consent was obtained from parents/guardians.

ORCID

Toshihiko Kakiuchi  <https://orcid.org/0000-0002-9995-5522>

REFERENCES

1. Bogveradze N, Hasse F, Mayer P, et al. Is MRCP necessary to diagnose pancreas divisum? *BMC Med Imaging*. 2019;19:33.
2. Gutta A, Fogel E, Sherman S. Identification and management of pancreas divisum. *Expert Rev Gastroenterol Hepatol*. 2019;13:1089-1105.
3. Kanth R, Samji NS, Inaganti A, et al. Endotherapy in symptomatic pancreas divisum: a systematic review. *Pancreatology*. 2014;14:244-250.

How to cite this article: Kakiuchi T, Yoshiura M, Furukawa R, Oka M. Middle-term natural course after acute pancreatitis associated with pancreas divisum. *Clin Case Rep*. 2023;11:e7255. doi:[10.1002/ccr3.7255](https://doi.org/10.1002/ccr3.7255)