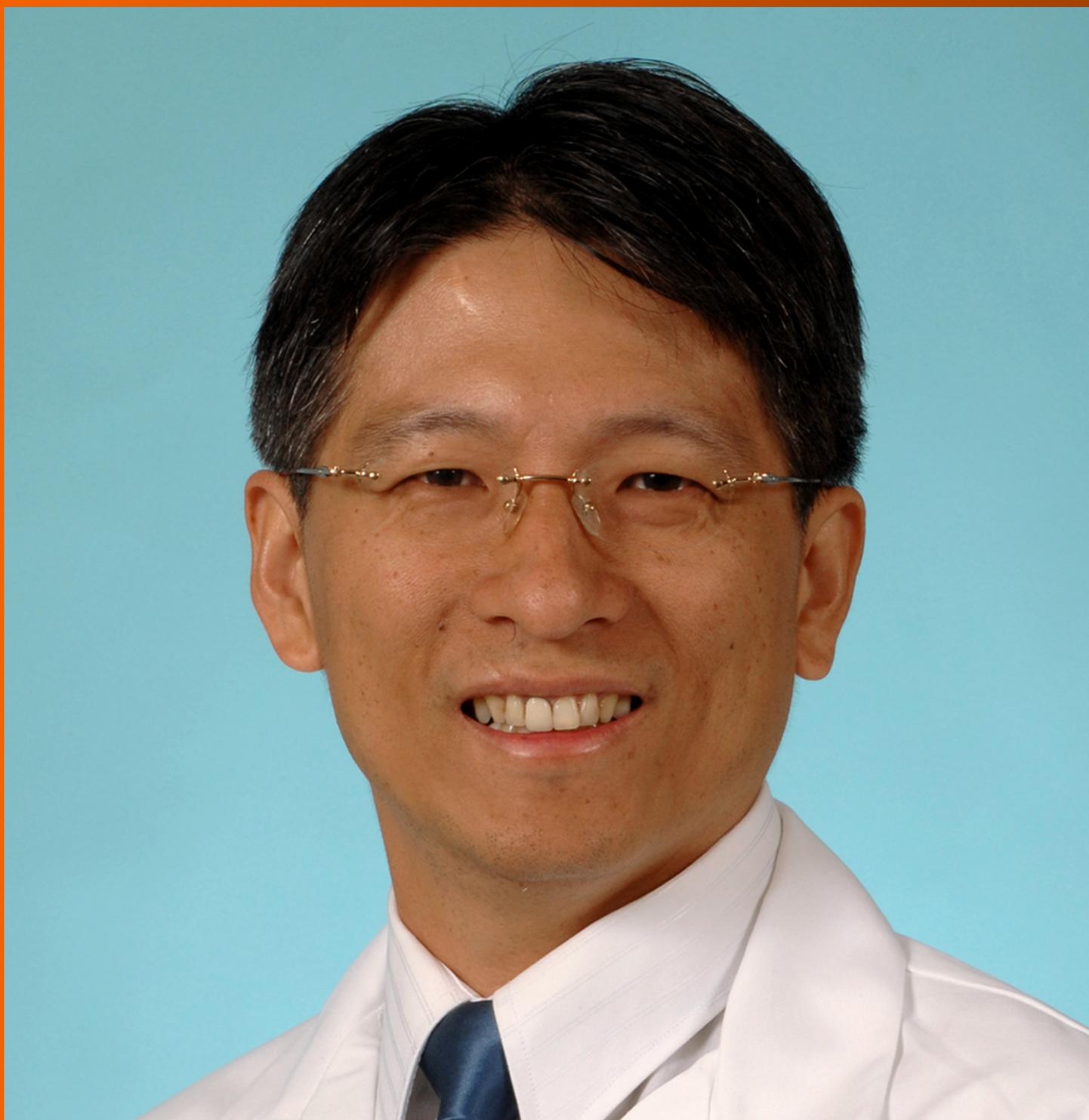


# World Journal of *Gastrointestinal Endoscopy*

*World J Gastrointest Endosc* 2023 August 16; 15(8): 518-544



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Editorial Board Member of *World Journal of Gastrointestinal Endoscopy*, Chien-Huan Chen, MD, PhD, Professor, Division of Gastroenterology, Department of Internal Medicine, Washington University School of Medicine, St. Louis, MO 63110, United States. chen330@wustl.edu

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The primary aim of *World Journal of Gastrointestinal Endoscopy* (*WJGE*, *World J Gastrointest Endosc*) is to provide scholars and readers from various fields of gastrointestinal endoscopy with a platform to publish high-quality basic and clinical research articles and communicate their research findings online.

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The *WJGE* is now abstracted and indexed in Emerging Sources Citation Index (Web of Science), PubMed, PubMed Central, Reference Citation Analysis, China National Knowledge Infrastructure, China Science and Technology Journal Database, and Superstar Journals Database. The 2023 Edition of Journal Citation Reports® cites the 2022 impact factor (IF) for *WJGE* as 2.0; IF without journal self cites: 1.9; 5-year IF: 3.3; Journal Citation Indicator: 0.28.

**RESPONSIBLE EDITORS FOR THIS ISSUE**

Production Editor: *Yi-Xuan Cai*; Production Department Director: *Xu Guo*; Editorial Office Director: *Jia-Ping Yan*.

**NAME OF JOURNAL**

*World Journal of Gastrointestinal Endoscopy*

**ISSN**

ISSN 1948-5190 (online)

**LAUNCH DATE**

October 15, 2009

**FREQUENCY**

Monthly

**EDITORS-IN-CHIEF**

Anastasios Koulaouzidis, Bing Hu, Sang Chul Lee, Joo Young Cho

**EDITORIAL BOARD MEMBERS**

<https://www.wjgnet.com/1948-5190/editorialboard.htm>

**PUBLICATION DATE**

August 16, 2023

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<https://www.wjgnet.com/bpg/gerinfo/242>

**STEPS FOR SUBMITTING MANUSCRIPTS**

<https://www.wjgnet.com/bpg/GerInfo/239>

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## Acute pancreatitis following endoscopic ampullary biopsy: A case report

Nidhi Mariam George, Nanda Amarnath Rajesh, Tharun Ganapathy Chitrambalam

**Specialty type:** Gastroenterology and hepatology

**Provenance and peer review:** Unsolicited article; Externally peer reviewed.

**Peer-review model:** Single blind

**Peer-review report's scientific quality classification**

Grade A (Excellent): 0  
Grade B (Very good): 0  
Grade C (Good): C  
Grade D (Fair): D  
Grade E (Poor): 0

**P-Reviewer:** Askarpour H, Japan; Kitamura K, Japan

**Received:** January 4, 2023

**Peer-review started:** January 4, 2023

**First decision:** April 13, 2023

**Revised:** April 18, 2023

**Accepted:** July 17, 2023

**Article in press:** July 17, 2023

**Published online:** August 16, 2023



**Nidhi Mariam George, Tharun Ganapathy Chitrambalam**, Department of General Surgery, SRM Medical College Hospital and Research Centre, Chennai 603203, Tamil Nadu, India

**Nanda Amarnath Rajesh**, Department of Medical Gastroenterology, SRM Medical College Hospital and Research Centre, Chennai 6030203, India

**Corresponding author:** Nidhi Mariam George, MBBS, Doctor, Department of General Surgery, SRM Medical College Hospital and Research Centre, Chennai-Theni Highway, Chennai 603203, Tamil Nadu, India. [dmidhigeorge@gmail.com](mailto:dmidhigeorge@gmail.com)

### Abstract

#### BACKGROUND

Endoscopic biopsy is mandatory for the diagnosis of malignant and premalignant ampullary tumours. The commonly reported inadvertent complications following routine mucosal biopsy include perforation and haemorrhage. Acute pancreatitis is an extremely rare complication following this procedure.

#### CASE SUMMARY

This report details the case of a 59-year-old man who underwent biopsy of the ampulla for a suspected periampullary tumour. Following the procedure, the patient presented with symptoms of acute pancreatitis which was substantiated by laboratory and radiological investigations. He was conservatively managed and discharged following complete resolution of symptoms.

#### CONCLUSION

This case report serves to highlight the importance of this potential complication following routine endoscopic biopsy of the ampulla.

**Key Words:** Acute pancreatitis; Endoscopy; Ampullary biopsy; Ampullary lesions; Ampulla of Vater; Case report

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**Core Tip:** Gastrointestinal endoscopic procedures are relatively safe and are being routinely performed with the advent of minimally invasive procedures. Acute pancreatitis is an extremely uncommon complication following endoscopic ampullary biopsy. It is important for endoscopists to be mindful of this untoward complication with appropriate post-procedure monitoring and support.

**Citation:** George NM, Rajesh NA, Chitrabalam TG. Acute pancreatitis following endoscopic ampullary biopsy: A case report. *World J Gastrointest Endosc* 2023; 15(8): 540-544

**URL:** <https://www.wjgnet.com/1948-5190/full/v15/i8/540.htm>

**DOI:** <https://dx.doi.org/10.4253/wjge.v15.i8.540>

## INTRODUCTION

Endoscopic biopsy is recommended for the evaluation of ampullary adenomas, ampullary tumours, and more recently, immunohistological staining for autoimmune pancreatitis[1,2]. The commonly encountered complications following this procedure include bleeding, infection, and perforation. Acute pancreatitis is an extremely uncommon complication with a high rate of morbidity and mortality. It can be attributed to the mucosal edema or intraductal hematoma caused by the ampullary biopsy[6]. Although rare, endoscopists are to be aware of this complication and patients need to be closely monitored following the procedure.

## CASE PRESENTATION

### Chief complaints

A 59-year-old man presented to our tertiary centre with symptoms of dyspepsia for which ultrasound of the abdomen was done and it showed dilatation of the common bile duct (10 mm). For further evaluation, liver function test was done, which was reported as normal. Contrast-enhanced computed tomography (CT) of the abdomen was then performed, which revealed dilatation of the common bile duct and pancreatic duct (3.5 mm). Side-viewing duodenoscopy (Olympus TJF-150 Video Duodenoscope; Olympus, Tokyo, Japan) was done, which revealed an ulcerated papilla from which a biopsy was taken (Figure 1). The sampling was done with Jumbo biopsy forceps without spike. Haemostasis was confirmed and the procedure was uneventful. Two hours later, the patient presented with acute onset upper abdominal pain and profuse sweating which developed 30 min following his meal.

### History of present illness

The pain was localised to the epigastrium and was severe in nature (8 on the Visual Analogue Scale) with radiation to the back. There was no history of vomiting.

### History of past illness

The patient was not a known diabetic or hypertensive.

### Personal and family history

The patient did not have any relevant family history. He was a non-alcoholic and non-smoker.

### Physical examination

At the Emergency Room, the patient's heart rate was 110 per minute and blood pressure was 140/80 mm of Hg. On examination of the abdomen, there was severe epigastric tenderness with guarding. The rest of the abdominal quadrants were non-tender with normal bowel sounds.

### Laboratory examinations

The patient's blood work-up pre- and post-procedure is shown in Table 1.

### Imaging examinations

Computed tomography of the abdomen showed features consistent with acute pancreatitis such as pancreatic enlargement and diffuse peri-pancreatic fat stranding (Figure 2).

## FINAL DIAGNOSIS

The patient was further evaluated to determine other attributing factors causing pancreatitis such as gallstone disease, alcohol, or any other precipitating drugs. After ruling these out, endoscopic biopsy of the ampulla was attributed as the

**Table 1** The patient's blood work-up pre- and post-procedure

Blood investigation	Pre-procedure	Post-procedure
WBC count	7500/mm <sup>3</sup>	13000/mm <sup>3</sup>
AST	35 IU/L	65 IU/L
ALT	40 IU/L	82 IU/L
Serum amylase	50 IU/L	1500 IU/L
Serum lipase	110 IU/L	800 IU/L

AST: Aminotransferase; ALT: Alanine aminotransferase; WBC: White blood cell.



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**Figure 1** Image as visualized through a side-viewing duodenoscope showing an ulcerated papilla from which a biopsy was taken.



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**Figure 2** Computed tomography of the abdomen showing features consistent with acute pancreatitis such as pancreatic enlargement and diffuse peri-pancreatic fat stranding.

cause.

## TREATMENT

The patient was admitted and kept nil per oral. He was managed conservatively with intravenous fluids, antibiotics, and analgesics. His general condition improved and he was gradually initiated on diet. He achieved complete resolution of symptoms and was discharged 48 h later.

## OUTCOME AND FOLLOW-UP

Histopathological examination of the tissues samples showed an adenomatous polyp with moderate dysplasia. The patient remained asymptomatic over a follow-up period of 6 mo.

## DISCUSSION

Upper gastrointestinal endoscopy is central for the diagnosis of a wide array of tumours arising at the ampulla of Vater including neoplasms such as neuroendocrine tumours, adenomas, and adenocarcinomas as well as non-neoplastic lesions such as lipomas, lymphangiomas, fibromas, adenomyomas, and hamartomas[3-5]. Acute pancreatitis, a commonly encountered complication following endoscopic retrograde cholangiopancreatography, is extremely rare following non-thermal endoscopic biopsy of the ampulla of Vater without previous cannulation. Morales *et al*[6], who reported the first such case in 1994, propositioned mucosal edema or intraductal hematoma with a resultant increase in pressure in the pancreatic duct as the cause. Ishida *et al*[7] presented a similar case of acute pancreatitis following endoscopic biopsy of the ampulla of Vater in 2013, where the cause was ascribed to the small ampulla of the patient. Confirmation of hemostasis at the end of the procedure is important in order to prevent the inadvertent development of acute pancreatitis as a result of intramural hematoma. Another contributing factor is the ampullary edema as a result of the biopsy forceps. Ampullary biopsy with side-viewing endoscopy is pivotal for the diagnosis of periampullary carcinoma. However, the yield of ampullary surface biopsies is limited and there arises the need for deeper biopsies which can further contribute to ampullary edema. In a case of acute pancreatitis following endoscopic ampullary biopsy reported by Michopoulos *et al* [8], they directed the biopsies to the area around the orifice. It is recommended to avoid biopsying the normal ampulla and to biopsy some distance from the mouth of the pancreatic duct to prevent acute pancreatitis; however, bleeding and edema can obscure vision, proving this to be difficult. There are very limited reported cases of acute pancreatitis following endoscopic biopsies from the ampulla of Vater. Most of these patients have had an uneventful recovery. Skelton *et al*[9] reported a case of severe necrotising pancreatitis following ampullary biopsy where the patient required multiple necrosectomies and two CT-guided drains. In our case, the patient was discharged 48 h post-procedure without any untoward outcomes.

## CONCLUSION

This case reports serves to enlighten endoscopists regarding the potential complication of acute pancreatitis following endoscopic biopsy of the ampulla, to educate patients regarding this complication, and to closely monitor them following the procedure.

## FOOTNOTES

**Author contributions:** George NM, Rajesh NA, and Chitrambalam TG contributed equally to this work; George NM assisted in patient care and wrote the manuscript, Rajesh NA and Chitrambalam TG assisted in data collection and manuscript revision; all authors have read and approved the final manuscript.

**Informed consent statement:** The patient and his wife have provided informed written consent for the publication of this case report.

**Conflict-of-interest statement:** All the authors declare that they have no conflict of interest to disclose.

**CARE Checklist (2016) statement:** The authors have read the CARE Checklist (2016), and the manuscript was prepared and revised according to the CARE Checklist (2016).

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**Country/Territory of origin:** India

**ORCID number:** Nidhi Mariam George [0000-0003-1305-529X](https://orcid.org/0000-0003-1305-529X).

**S-Editor:** Liu JH

**L-Editor:** Wang TQ

**P-Editor:** Cai YX

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## REFERENCES

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- 1 **Tsukada K**, Takada T, Miyazaki M, Miyakawa S, Nagino M, Kondo S, Furuse J, Saito H, Tsuyuguchi T, Kimura F, Yoshitomi H, Nozawa S, Yoshida M, Wada K, Amano H, Miura F; Japanese Association of Biliary Surgery; Japanese Society of Hepato-Biliary-Pancreatic Surgery; Japan Society of Clinical Oncology. Diagnosis of biliary tract and ampullary carcinomas. *J Hepatobiliary Pancreat Surg* 2008; **15**: 31-40 [PMID: [18274842](https://pubmed.ncbi.nlm.nih.gov/18274842/) DOI: [10.1007/s00534-007-1278-6](https://doi.org/10.1007/s00534-007-1278-6)]
- 2 **Kamisawa T**, Tu Y, Egawa N, Tsuruta K, Okamoto A. A new diagnostic endoscopic tool for autoimmune pancreatitis. *Gastrointest Endosc* 2008; **68**: 358-361 [PMID: [18513718](https://pubmed.ncbi.nlm.nih.gov/18513718/) DOI: [10.1016/j.gie.2008.02.018](https://doi.org/10.1016/j.gie.2008.02.018)]
- 3 **Hartel M**, Wente MN, Sido B, Friess H, Büchler MW. Carcinoid of the ampulla of Vater. *J Gastroenterol Hepatol* 2005; **20**: 676-681 [PMID: [15853978](https://pubmed.ncbi.nlm.nih.gov/15853978/) DOI: [10.1111/j.1440-1746.2005.03744.x](https://doi.org/10.1111/j.1440-1746.2005.03744.x)]
- 4 **Cho YS**, Joo HJ, Seo EK, Jeon WJ, Chae HB, Park SM, Sung RH. A case of juxtapapillary gangliocytic paraganglioma treated with endoscopic resection. *Korean J Med* 2010; **79**: 543-548 Available from <https://www.koreamed.org/SearchBasic.php?RID=1458432>
- 5 **Artaza T**, Potenciano JM, Legaz M, Muñoz C, Talavera A, Sánchez E. Lymphangioma of Vater's ampulla: a rare cause of obstructive jaundice. Endoscopic therapy. *Scand J Gastroenterol* 1995; **30**: 804-806 [PMID: [7481550](https://pubmed.ncbi.nlm.nih.gov/7481550/) DOI: [10.3109/00365529509096331](https://doi.org/10.3109/00365529509096331)]
- 6 **Morales TG**, Hixson LJ. Acute pancreatitis following endoscopic biopsy of the ampulla in a patient with Gardner's syndrome. *Gastrointest Endosc* 1994; **40**: 367-369 [PMID: [8056246](https://pubmed.ncbi.nlm.nih.gov/8056246/) DOI: [10.1016/s0016-5107\(94\)70076-1](https://doi.org/10.1016/s0016-5107(94)70076-1)]
- 7 **Ishida Y**, Okabe Y, Tokuyasu H, Kaji R, Sugiyama G, Ushijima T, Sasaki Y, Yasumoto M, Kuraoka K, Tsuruta O, Sata M. A case of acute pancreatitis following endoscopic biopsy of the ampulla of Vater. *Kurume Med J* 2013; **60**: 67-70 [PMID: [24464133](https://pubmed.ncbi.nlm.nih.gov/24464133/) DOI: [10.2739/kurumemedj.ms63003](https://doi.org/10.2739/kurumemedj.ms63003)]
- 8 **Michopoulos S**, Kozompoli D, Ntai S, Kalantzis G, Zampeli E, Petraki K. Acute Pancreatitis Following Endoscopic Ampullary Biopsies without Attempted Cannulation of the Ampulla of Vater. *Clin Endosc* 2016; **49**: 575-578 [PMID: [27435698](https://pubmed.ncbi.nlm.nih.gov/27435698/) DOI: [10.5946/ce.2016.043](https://doi.org/10.5946/ce.2016.043)]
- 9 **Skelton D**, Barnes J, French J. A case of severe necrotising pancreatitis following ampullary biopsy. *Ann R Coll Surg Engl* 2015; **97**: e61-e63 [PMID: [26263955](https://pubmed.ncbi.nlm.nih.gov/26263955/) DOI: [10.1308/003588415X14181254789646](https://doi.org/10.1308/003588415X14181254789646)]



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