

Prevalence of malignancy in patients with pure main duct intraductal papillary mucinous neoplasms

Khaled Abdeljawad, MD,¹ Krishna C. Vemulapalli, MBBS, MPH,^{1,2} C. Max Schmidt, MD, PhD,³ John Dewitt, MD, FASGE,^{1,2} Stuart Sherman, MD, FASGE,^{1,2} Thomas F. Imperiale, MD,^{1,2} Mohammad Al-Haddad, MBBS, MSc, FASGE^{1,2}

Indianapolis, Indiana, USA

Background: Risk of malignancy in main duct intraductal papillary mucinous neoplasm (MD-IPMN) ranges from 36% to 100% in the literature. Although surgical resection is recommended for all MD-IPMNs, the risk of malignancy based on main pancreatic duct (MPD) size alone remains unclear.

Objective: To assess the prevalence of malignancy in symptomatic and asymptomatic patients with pure MD-IPMN based on MPD size.

Design: Single-center retrospective study of prospectively collected data.

Settings: Tertiary referral center.

Patients and Interventions: Fifty-two patients with pure low-risk MD-IPMN. Clinical, endoscopic, radiographic, and pathologic data were reviewed.

Main outcome measurements: Prevalence of malignancy in patients with pure MD-IPMN based on histopathology of resected lesions.

Results: Sixteen asymptomatic patients had pure MD-IPMN on surgical pathology, 4 (25%) with malignant disease, compared with 25 of 36 symptomatic patients (69%) with pure MD-IPMN. Logistic regression identified symptoms and MPD size as predictors of malignancy. Receiver operating characteristic curve analysis demonstrated that MPD size (optimal cutoff of 8 mm) produced the greatest area under the curve to discriminate between benign and malignant MD-IPMN (.83; 95% CI, .72-.94). MPD size greater than 8 mm has a relative risk of 2.8 for malignancy (95% CI, 1.6-4.9).

Limitations: Retrospective, single-center study at a tertiary referral hospital. Study population included only patients who underwent surgical resection.

Conclusion: Asymptomatic MD-IPMN patients with a duct size of no more than 8 mm have a lower prevalence of malignancy and may represent a distinct group of patients with less aggressive biologic behavior. Further studies are needed to confirm our observations. (Gastrointest Endosc 2014;79:623-9.)

Intraductal papillary mucinous neoplasms (IPMNs) are tumors with a malignant potential that originate from the pancreatic ductal system. Because of the recent advances in imaging, IPMNs are increasingly being diagnosed. The

prevalence of pancreatic cysts in asymptomatic individuals undergoing MRI for reasons unrelated to the pancreas varies from 2% to 45%,^{1,2} with a significant proportion of those fitting the IPMN classification based on imaging

Abbreviations: AR, absolute risk; CI, confidence interval; IPMN, intraductal papillary mucinous neoplasm; MD-IPMN, main duct intraductal papillary mucinous neoplasm; MPD, main pancreatic duct; ROC, receiver operating characteristic.

DISCLOSURE: All authors disclosed no financial relationships relevant to this publication.

Copyright © 2014 by the American Society for Gastrointestinal Endoscopy 0016-5107/\$36.00

<http://dx.doi.org/10.1016/j.gie.2013.08.024>

Received June 26, 2013. Accepted August 20, 2013.

Current affiliations: Department of Internal Medicine (1), Division of Gastroenterology (2), Department of Surgery (3), Indiana University School of Medicine, Indianapolis, Indiana, USA.

Reprint requests: Mohammad Al-Haddad, MBBS, MSc, FASGE, Associate Professor of Medicine, Division of Gastroenterology & Hepatology, Indiana University School of Medicine, 550 N University Blvd, UH 4100, Indianapolis, IN 46202.

characteristics.² After identification on cross-sectional imaging, patients with suspected IPMN typically undergo further evaluation to confirm the diagnosis and assess the risk of malignancy. This evaluation includes EUS, ERCP, and intraductal ultrasound in some cases.³⁻⁷ EUS morphology alone has a limited ability to classify the type or to assess malignant potential of pancreatic cystic lesions.^{8,9} FNA is a helpful adjunct to EUS for the accurate classification of cystic lesions based on morphology, cytology, and tumor markers.^{3,9-12}

Previous studies estimate the malignancy risk in main duct (MD)-IPMNs to be 36% to 100%, with a median of 66% among 15 published studies (Table 1).¹³⁻²⁶ The overall risk of malignancy in IPMN has been associated with older age, presence of jaundice, weight loss, dilated main pancreatic duct (MPD) over 10 mm, presence of mural nodules or solid component, and thickened septa.^{3,17,27-31} Most studies investigating resected MD-IPMNs include patients with side branch or mixed IPMNs, most of whom were symptomatic at presentation, making accurate assessment of malignancy risk in asymptomatic MD-IPMN difficult. In addition, the prevalence of malignancy in MD-IPMN when MPD measures less than 1 cm is not entirely clear. Because of the high risk of malignancy, the International Consensus Guidelines for the management of IPMN initially published in 2006 and recently updated in 2012, recommend resection of all main duct and mixed variants of IPMNs regardless of presence of symptoms in surgically fit patients.^{32,33} These guidelines may have overestimated the risk of malignancy in at least some MD-IPMN patients with main duct dilation less than 1 cm. The aims of this study were to assess the prevalence of malignancy in patients with pathologically confirmed pure MD-IPMN and to stratify this risk of malignancy based on MPD size.

METHODS

This single-center, retrospective, cross-sectional study was approved by the Institutional Review Board of Indiana University. We reviewed prospectively maintained databases for all pathologically confirmed IPMNs resected between 1997 and 2009. A detailed review of patients' medical records was conducted, including preoperative clinical, endosonographic, and radiologic and resection pathology data. MD-IPMN was assessed on cross-sectional imaging as dilation of the MPD with a minimum diameter of 5 mm.^{17,32} MPD size was determined based on maximal cross-sectional diameter perpendicular to the long axis of the main duct. The size was determined based on the average diameter of the MPD on available preoperative imaging (EUS, CT, and/or MRI/MRCP). When gadolinium-enhanced MRI/MRCP was used, MPD size assessments were based on images taken before the administration of secretin.

All patients with mixed or pure branch duct IPMN, adjacent solid mass lesion, malignant cytology on aspiration, or

Take-home Message

- Asymptomatic main duct intraductal papillary mucinous neoplasm (MD-IPMN) patients with limited main duct dilation (≤ 8 mm) are significantly more likely to have benign rather than malignant pathology, as compared with those with duct sizes exceeding 8 mm.
- Imaging and clinical surveillance may be a reasonable strategy for managing such patients, particularly those with increased surgical risk.

with a history of prior pancreatectomy were excluded. In this study, patients' lesions were categorized as benign (low-grade dysplasia or moderate-grade dysplasia) or malignant (high-grade dysplasia and invasive carcinoma) based on surgical resection pathology rendered by expert gastroenterology pathologists and according to the current classification guidelines.³⁴ The study included some patients characterized by the previously adopted World Health Organization IPMN grades (adenoma, borderline, carcinoma in situ, or invasive).³⁵ On the basis of this system, patients were classified with malignant/nonmalignant and invasive/noninvasive disease. Adenoma and borderline pathology were considered to be nonmalignant disease, whereas carcinoma in situ and invasive IPMNs were classified as malignant. Similarly, adenoma, borderline, and carcinoma in situ were classified as noninvasive, whereas invasive adenocarcinoma was classified as invasive. We compared the proportion of malignant cases in symptomatic and asymptomatic groups and examined the association between MPD size pancreatic duct and the risk of malignancy.

Statistical analysis

The χ^2 test was used to evaluate the differences in gender, pathology, and malignancy between symptomatic and asymptomatic patients. All analyses except the Fisher exact test were run on SPSS (Version 20, IBM Corp, NY). Fisher exact values where applicable were derived using SAS (Version 9.3, SAS Inc, Cary, NC). Ages at the time of surgery and duct sizes were compared using independent sample *t* tests. In addition, logistic regression analysis was performed with gender and group (symptomatic or asymptomatic) as categorical factors, age and duct size as covariates, with malignancy as the dependent variable. The receiver operating characteristic (ROC) curve for predicting malignancy based on MPD size was derived using SPSS (Version 20, IBM Corp, NY). Using the coordinates of this curve, we plotted a sensitivity-specificity chart for duct size.

RESULTS

Between 1997 and 2009, 311 patients underwent pancreas resection for pathologically proven IPMN as identified from our prospectively maintained surgical IPMN

Download English Version:

<https://daneshyari.com/en/article/3303265>

Download Persian Version:

<https://daneshyari.com/article/3303265>

[Daneshyari.com](https://daneshyari.com)