Delayed Growth in Incidental Pancreatic Cysts: Are the Current American College of Radiology Recommendations for Follow-up Appropriate?

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DOI: http://dx.doi.org/10.1148/radiol.2015140972

Abstract

Purpose
To evaluate growth kinetics of asymptomatic small (≤2 cm) incidental pancreatic cysts and to assess potential implications of these in the context of current American College of Radiology recommendations.

Materials and Methods
This institutional review board–approved HIPAA-compliant retrospective study with waiver of informed consent included patients with asymptomatic small incidental pancreatic cysts (diameter, 5–20 mm) with two or more magnetic resonance (MR) examinations performed at least 6 months apart at a tertiary institution. The largest cyst dimension was measured on T2-weighted single-shot fast spin-echo images by one of six radiologists (1–3 years of experience) who were trained to measure pancreatic cysts in a similar manner. All analysis was conducted at the patient level by choosing the cyst that exhibited the greatest growth over the follow-up period in each patient. Fisher exact, $\chi^2$, and Kruskal-Wallis tests and analysis of variance were used to test correlation between cyst characteristics and growth.

Results
A total of 259 patients (mean age, 65 years ± 11 [standard deviation], male-to-female ratio, 42:58) with 370 asymptomatic small incidental pancreatic cysts were included. At presentation, median cyst size was 9.4 mm (interquartile range [IQR], 7.0–12.2 mm), and 64 patients (25%; 95% confidence interval [CI]: 20, 30) had septations. The median imaging follow-up period was 2.2 years (IQR, 1.2–3.9 years; range, 0.5–11.0 years), with a median of three MR examinations (IQR, two to four examinations) per patient. In 171 (66%; 95% CI: 60, 72) of the 259 patients, cysts remained stable; in 18 (7%; 95% CI: 4, 11), cysts shrank; and in 70 (27%; 95% CI: 22, 33), cysts grew (median total growth and median annual growth of 4.8 mm and 2.3 mm/y, respectively). Age, cyst size, and cyst septation at presentation were not predictive of growth. Overall, 29 (11%), 16 (6%), and four (1.5%) of the cysts increased in size after 1, 2, and 3 years of initial stability, respectively. Of the 18 patients who underwent pancreatic surgery, only one patient with an intraductal papillary mucinous neoplasm had high-grade dysplasia. One patient developed pancreatic adenocarcinoma remotely at the location of the pancreatic cyst diagnosed 11 months prior.

Conclusion
In the majority of patients, asymptomatic small incidental pancreatic cysts remained stable during a median follow-up period of 2.2 years; however, in 27% of patients, cysts increased in size over time, with 11% growing after an initial 1-year period of stability.
Current American College of Radiology recommendations to discontinue imaging follow-up after 1 year of stability may need to be reevaluated.

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